



This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

- + *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.
- + *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.
- + *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.
- + *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at <http://books.google.com/>

Stanford University Libraries



3 6105 006 521 921

Digitized by Google



LELAND-STANFORD-JUNIOR-UNIVERSITY



Digitized by Google

THE PSYCHOLOGICAL CLINIC

*A Journal of Orthogenics
For the Normal Development
of Every Child*

Psychology

Hygiene

Education

Editor:
LIGHTNER WITMER, Ph.D.,
University of Pennsylvania

VOLUME VIII.

1914-1915

STANFORD LIBRARY

THE PSYCHOLOGICAL CLINIC PRESS
PHILADELPHIA, PA.

54

Digitized by Google

Orthogenics concerns itself primarily with the causes and treatment of retardation and deviation, but it is by definition the science of normal development, and comprehends within its scope all the conditions which facilitate, conserve, or obstruct the normal development of mind and body.

230975

C

VRANAJI ALOKMAT

CONTENTS OF VOL. VIII.

ARTICLES.

	PAGE
The Montessori Method.— <i>Lightner Witmer</i>	1
The Artistic Value of the Montessori Geometrical Insets.— <i>Harriet Sayre</i>	6
Incorrigibility due to Mismanagement and Misunderstanding.— <i>Claiborne Callin</i>	12
A Study of the School Inquiry Report on Ungraded Classes.— <i>Elizabeth E. Farrell</i>	29, 57, 99
The Exceptional Child in School.— <i>A. W. Tretton</i>	48
Retardation as indicated by One Hundred City School Reports.— <i>Hilda Volkmar and Isabel Noble</i>	75
Class Size and School Progress.— <i>Philip A. Boyer</i>	82
The Problem of Life from a Girl's Point of View.— <i>Margaret Otis</i>	93
The Further History of some Troublesome Boys.— <i>Horace Richards Barnes</i>	107
The Psychology of it.— <i>Charles Keen Taylor</i>	114
The Hygiene of Eugenic Generation.— <i>J. E. Wallace Wallin</i>	121, 170
Speech Defects in Young Children.— <i>Carolyn E. Morrison</i>	138
A Study of Delinquent Girls.— <i>W. H. Pyle</i>	143
A Study of Defective Pupils in the Public Schools of Tacoma, Wash.— <i>Robert A. Cummings</i>	153
The Significance of the Binet Mental Ages.— <i>Edward L. Thorndike</i>	185
The Binet Tests applied to Colored Children.— <i>Byron A. Phillips</i>	190
Experience and the Binet-Simon Tests.— <i>Rudolf Pintner and Donald G. Patterson</i>	197
A Study in the Borderland of Morality.— <i>Margaret Otis</i>	201
Six Weeks with a Supposedly Hopeless Case.— <i>Alice C. Hinckley</i>	213
Improvement of Dental Hygiene in the High School with Relation to Efficiency.— <i>Wilfred L. Foster</i>	230
Obstructed Breathing and Memory.— <i>Felix Arnold</i>	234
Effect of Adolescent Instability on Conduct.— <i>Augusta F. Bronner</i>	249
The Binet-Simon Tests in Relation to the Factors of Experience and Maturity.— <i>J. E. Wallace Wallin</i>	266
Clinical Psychology and the Rural Schools.— <i>Ernest R. Groves</i>	272

REVIEWS AND CRITICISM.

Changing America. By Edward A. Ross.....	25
The Normal Child and Primary Education. By Arnold L. Gesell and Beatrice Chandler Gesell.....	52
How I kept my Baby Well. By Anna G. Noyes.....	53
The Backward Child. By Barbara Spofford Morgan.....	91
The Hygiene of the School Child. By Lewis M. Terman.....	149
Vocational Guidance. By J. Adams Puffer.....	180
Manual of Physical and Mental Tests. By Guy Montrose Whipple.....	208
Stammering and Cognate Defects of Speech. By C. S. Bluemel.....	209
The English Convict. By Charles Goring.....	275

NEWS AND COMMENT.	PAGE
Meeting of Experimental Psychologists.....	26
Dr. George W. Twitmeyer Died February 21, 1914.....	26
A New Research Fellowship at Stanford University.....	54
Clinical Psychology at University of Pittsburgh Summer School.....	54
Summer Courses in Systematic and Applied Psychology at University of Pennsylvania.....	55
International Congresses to meet	92
The St. Louis Public Schools establish a Psycho-educational Clinic.....	92
Psychology and Medicine Basis of National Children's Bureau.....	118
A Teachers College for the South.....	119
Directory of American Psychological Periodicals (Revised).....	120
Vocational Evening Classes.....	151
Surgeon General Gorgas and the Nation's Greatest Need.....	151
American Public Health Association Meeting.....	182
A Psychological Clinic in New Brunswick, N. J.....	182
Meeting of the American Psychological Association.....	184
School and Society, a New Educational Weekly.....	210
Educational Administration and Supervision.....	210
Toledo University, a Municipal University for the People.....	211
Extension Work in Education by the University of Pennsylvania.....	247
INDEX OF NAMES.....	277
INDEX OF SUBJECTS.....	279

The Psychological Clinic

Copyright, 1914, by Lightner Witmer, Editor.

VOL. VIII, No. 1

MARCH 15, 1914

THE MONTESSORI METHOD.

By LIGHTNER WITMER, Ph.D.,

University of Pennsylvania.

Critics of Montessori claim that there is nothing *new* in the Montessori method—that even her apparatus for sense training is derived from Seguin and Bourneville—that many schools for the training of feeble-minded children employ apparatus equally as good as hers, and some, notably the Massachusetts Training School at Waverly, under Dr. Fernald, have developed sense training apparatus which is far superior. But these claims—true enough so far as they go—miss the mark, for no one can invent or discover an educational method of entirely original elements. What is new about the Montessori method—and it can in my opinion be considered a new method—is the particular combination of elements, the peculiar emphasis laid upon certain ideals and certain details of procedure. Above all, Montessori is the first *to do*—and with striking success—what others have only talked about.

Others, like Montessori, employing their talents in the education of feeble-minded children, have, from Seguin to Fernald, believed and asserted that the methods of training feeble-minded children were applicable to the training of normal children. Montessori *applied* them, giving the world the first convincing demonstration that methods which are successful in developing the mental capacities of feeble-minded children, are even more successful in developing the mental powers of normal children.

Others, philosophical educators from time immemorial, have characterized the educational process as an unfolding of the child's natural aptitudes and powers. But no one except Montessori has had the courage to make this a fundamental classroom principle. Is the teacher an "instructor,"—a builder who places brick upon brick and mortar to erect the edifice of a child's mind? Or is the teacher an "educator," a "kindergartner,"—the grower of a plant

who waters and cultivates the soil in order that the plant may develop leaf and flower in accordance with its own nature? Montessori, like Froebel, accepts the latter alternative, but unlike Froebel she makes it the cardinal principle of the teacher's practice in the school room.

In the Casa dei Bambini, at Rome, I saw little children three to seven years old, independently and resolutely setting about and executing fairly difficult tasks. They did not wait for the teacher to provide them with the material they needed, nor if they failed in accomplishing a task did they look to the teacher for assistance. They were let alone to work and grow in their own way. And yet there was much direction; a well conceived set of apparatus was provided upon which the children could work and through some of this material Montessori had been able to secure the really remarkable result of teaching four and five year old children to write without effort or even the knowledge that they were being taught penmanship. As they served one another at luncheon they had the tottering and unsteady gait of little children, and yet everything was carried forward with precision. The greatest failures in this room were teacher-visitors from England and America, who could not be restrained from helping children whom they saw making mistake after mistake. These spectators were gradually to acquire from the Montessori school the understanding to let the child alone to work out his own salvation.

In how many American kindergartens do dear little children still sit on nice little stools waiting for devoted teachers to tell them what to do! Like little birds in a nest they sit with their mouths wide open until the foster mother bird drops in the appropriate worm. Where the teacher's help is reduced to a minimum in the Montessori school, it is at a maximum in many kindergartens. Where the Montessori teacher is told to repress herself, the kindergarten teacher is too often the conspicuous center of the performance. The children like marionettes respond to hidden strings which are being pulled at the dictates of a symbolic philosophy, honeyed over with the affectation of an exaggerated mother love.

The Montessori teacher is to be tied and gagged in the classroom, but not blindfolded. She is an observer who must note carefully the stages of development through which her children are passing and see that the proper agencies are provided which will make it possible for them to take the next step forward. She places her apparatus, the materials of instruction, as it were upon shelves. It is the teacher's duty to see that they are all in place and ready to be seized upon by the child as he requires each piece for his individual

development. But she is not to give the child what she thinks he needs, much less to insist upon his using it; she must not point out the objects on the shelf nor lift the child in her arms that he may reach them. She must not even show the child that a chair may be employed to get at the shelf. She must permit the child to make this discovery for himself. The demands of his own nature for occupation will teach the child the ways and means of satisfying these demands. The best kind of education, according to Montessori, is that which the child gives himself.

Many other educators and psychologists before Montessori, have insisted that psychology, which is the science of mental development, should be made the basis of educational practice. Even the kindergartner talks about the psychology of the child. But no one except Montessori has presented to the world an educational system founded solely upon psychological principles and evolved directly out of the psychological laboratory. Indeed the Montessori school-room is a laboratory, and the Montessori teacher is its director. We know practically nothing, says Montessori, of the psychology of the child of from three to seven. Let us learn. Let the teacher of the Montessori classroom learn her psychology from her pupils. This does not mean that a teacher untrained in psychology is to be considered proficient in understanding what she sees in the Montessori classroom or in employing the Montessori method. Indeed no system of education has ever laid such demands upon the teacher to secure an adequate professional equipment from the thorough study of the principles of psychology. And it must be a modern and a comprehensive psychology, involving a knowledge of the functions of the brain, of hygiene, of the home and social life of the child. It must not be philosophy masquerading as psychology, such as we find in Froebel and Herbart.

Others, although only within the last few years, have emphasized the social function of the school. Many of us believe that the school must be conceived to be the most important social agency for conserving and developing the human race. No one has ever applied this modern conception of education with the thoroughness of the Montessori Houses of Childhood. In one aspect to which I have already referred, the Montessori teacher is a psychological observer, but in a more important aspect the Montessori teacher is a well-trained, intelligent mother, whose primary function is to see that the growing child is adjusted to his home and social environments. For this reason Montessori has included within her system of education, occupations which fit the child for domestic life, to dress himself, to feed himself, and do his share in caring for the home.

The Froebelian kindergarten also emphasizes the mother aspect of the kindergartener but it is a very different kind of mother. The kindergarten-mother-teacher too often seems to make it her prime object to provide the child with a "joy ride" through the year or two preceding his arrival at school age.

These are the distinguishing characteristics of the Montessori method as I observed them in the Montessori schools at Rome, and as I derive them from Montessori's publications. Many details of her method remain for consideration, but Dr. Montessori would, I believe, leave the exact details of her method to the well-trained Montessori teacher, for she would no more wish to prescribe exact formulas for the teacher than she would prescribe them for the child. The teacher must work out her own salvation, as well as the child, and this arouses our expectation of important results from the application of the Montessori method. With Montessori, I believe we know very little concerning the natural aptitudes of the child, and that we tend to circumscribe too narrowly the possible limits of a child's development. Out of the Montessori practice will come in time the most astonishing revelations as to what may be accomplished in child development. Already as one of its first fruits, we have learned that a little child of four or five may be taught to read and write with no more painful effort than is involved in playing with a set of blocks.

Doubtless there are details of the Montessori system which are open to criticism. However, this is not the time for criticism but for interpretation and understanding. To some it would appear that Montessori dispenses entirely with discipline. I do not believe that she goes farther than to emphasize the importance of providing for the child's freedom in the schoolroom. Freedom and discipline appear to be contradictory educational principles. Emerson was once asked whether one of his statements did not contradict another. He replied that he had no fear of contradicting himself, indeed he had made the one statement because the world had need of it, and the contradictory statement because the world had need of that too. In the political and social life of the community, an over-emphasis on personal liberty may bring us close to the peril of license. I do not think Montessori's practice over-emphasizes the freedom of the child in the schoolroom to the point of ignoring the importance of discipline and obedience. Moreover it is primarily a question of what is opportune, and in our present school practice, the Montessori principle of freedom certainly cannot be too greatly stressed. I know a school superintendent in a large city who requires his kindergarten teachers to follow a rigid program provided at the

beginning of the school year. To secure well-disciplined pupils for his first grades, the kindergarten teachers are ordered to prohibit their pupils from speaking without having first secured the express permission of the teacher. This superintendent should be required, as an alternative to official decapitation for being an enemy of the human race, to take a course in Montessori with the hope that after having completed it, he would cease exercising his authority to cripple perhaps forever, the natural and free development of the children and teachers under his jurisdiction.

I would distinguish between the Montessori idea and the Montessori system. The Montessori *idea* is a group of scientific principles put together by an enthusiastic student of modern psychology. No educational system can be successfully conducted in these modern times which does not realize more or less fully that education is a social process, that it must be founded upon the approved principles and demonstrable facts of psychology, that it must look upon the free development of the child as its most important object, and that methods which psychological experts find of service in the educational treatment of exceptional children, must be applied to normal children.

The Montessori *system* comprises a set of apparatus and definite methods of procedure. Whether this system is already complete in itself or whether it must be supplemented by additional materials of instruction and additional methods of procedure, is an open question. I do not believe Dr. Montessori wants us to understand that her system is now a closed one. To my mind it is not the least valuable feature of her system, that it will never be closed, but will always develop as our knowledge of the child develops.

(To be continued)

THE ARTISTIC VALUE OF THE MONTESSORI GEOMETRICAL INSETS.

BY HARRIET SAYRE,

Philadelphia, Pa.

Investigators of the Montessori method may be interested to know what has been accomplished in drawing by a class of eighteen children between the age of five and eight years. During a school term of eight months, these children by the use of the geometrical insets, have conceived a series of over five hundred drawings without the aid or suggestion of the teacher. The material held the interest and attention of the children from the beginning, and even the older ones preferred it to any other busy work. There was no regular period for the drawing; it was done by the older ones in short intervals between the regular school lessons, and by the younger ones whenever they desired to select the insets.

The purpose of the material was to train the powers of observation of form and color and to develop muscular control preparatory to writing. The children exceeded this purpose by discovering the artistic value of the forms. It is doubtful if the younger ones, those five and six years of age, could have accomplished such results except through the spirit of emulation. Each child, however, maintained his own individuality of expression and perfected his work independently.

Upon first presentation the child used the insets as outlined for this material in "The Montessori Method." That is, he traced around the frames and their corresponding forms and filled in the enclosed space with colored crayon. After a few days of tracing and coloring, a child discarded the frames and used only the insets. He selected the triangle, quatrefoil and small circle and drew a pattern of unique design. The child had previously made clear his conception by holding up the insets as if against a background, and the drawing was true to the description. It was not a rare thing for a child to see a design synthetically and describe his impression of the whole. Again, children of less rapid perception designed as they worked, while the literal, unimaginative child heaped inset upon inset regardless of balance or form.

At first the designs were crude in color and chaotic in arrangement, but they gradually became more symmetrical. In a short

time the children began to eliminate parts of the insets and to introduce free hand lines. A little boy six years of age drew a design with the oval and the tip of the large triangle. The oval was colored yellow and the remaining part red. "It's the sun," he explained, "and these tips are the sun's rays." A little girl repeated the small circle four times in the form of a square and added free hand lines to complete the design.

There had been no attempt to teach the names of the more complex forms, but the demand for the name arose with the use of the object, and the child added the new words to his vocabulary with unusual rapidity, even the smaller children soon learning to recognize the names of the various insets.

It was interesting to note their choice of material and their method of work. Some children preferred the wooden insets, some the metal, while others would select the frames and trace the enclosed outline of the geometrical figure. Some designed on the blackboard and then reproduced the drawing on paper, while others used paper exclusively.

The youngest children, those who had never been in school before, early evinced a tendency toward ambidexterity. Their fingers were unaccustomed to the use of the pencil. They were unrestricted in their use of the insets, and to trace the form in the easiest manner they changed the pencil from one hand to the other. In the filling-in process, when the fingers became cramped by continued movement, they again changed the pencil to relieve the cramped position. They were thus learning to control the muscles of both hands. In the act of writing which followed these preliminary exercises, four of the children could use either hand with equal facility without making any variation in the form or size of the letter. A little boy not five years of age found that he could make the figure one simultaneously with both hands. He then tried to make the figure four. This required a greater mental effort to prevent the lines from diverging to right and left instead of moving in one direction, but after a moment's hesitation he wrote the figure slowly and accurately. In a short time he could make other figures in the same manner, and also a number of the letters. This ambidexterity existed only during the formative period. When the act of writing became an established habit, those who had been using both hands gradually learned to use the one to which they were more accustomed. Through this formal sense training the child's power of observation, comparison, and judgment grew wonderfully keen. The sense exercises had attracted his attention to form and color in his environment, and he was learning to apply his ideas.

A child, while in church, had observed a brown hat trimmed with a bow of orange ribbon and blue flowers, and she selected those colors to complete her design. Another child had studied the tints of a stained glass window, another, those of a carpet, while a fourth had seen the green and brown grasses in a field, and showed dissatisfaction because she could not find a crayon the exact shading of the brown grass. This freedom of expression developed not only habits of attention and perseverance, but also diversity of design. The first border was made by a little boy six years of age. He repeated the quatrefoil eight times and colored the drawing with red and black crayon. Another child drew a border with quatrefoil and circle, then cut it out and mounted it on paper of another color. From these first conceptions arose others of varied combinations. Some were conceived by the imagination, some were the result of observation.

Embroidered design was suggested by a child eight years old. She traced a doily on linen with the quatrefoil and outlined it with yellow silk. She then cut the linen in the form of a square, turned the edges under and backstitched them with silk of different color. Soon a number of the girls began to embroider original patterns, while the youngest children of the class expressed a desire to sew. They often gathered in groups helping each other, discussing the size and shape of doily or center piece, or matching different colored silks for harmonious combinations. A child of seven was so pleased with her new accomplishment that she immediately made further use of it.

She selected a dress from her doll's wardrobe, traced it on tissue paper, transferred the pattern twice on thin linen, cut out the two parts and sewed them together. The doll was then arrayed in its new attire and presented for inspection. This ability to enlarge upon suggestion was a source of spiritual as well as intellectual education. The children were happy and industrious and a superior moral tone pervaded the school room.

The next step in development was made by a child seven years of age, a little girl of imperious nature whose attention was easily distracted and who showed but little interest in her surroundings. She gradually became attracted to the insets, and one day while designing on the board with the oval she suddenly cried "I've drawn a tulip!" She had repeated the inset three times to form the petals and had drawn an irregular free hand line to represent the stem. She gazed at the flower delightedly, then drew the leaf. Her conception of its size and shape was imperfect, and discovering her error she drew another leaf of larger size but did not alter its form. A little boy called her attention to this, but she refused to change the design.

The little boy whose suggestion had been rejected, also drew a tulip and added the leaves correctly. They were neither stiff nor conventional but were drawn according to nature, one leaf bent slightly to the right. He explained this by saying he had seen leaves bend that way when the wind or rain beat against them. A great interest was now manifested in the portrayal of various flowers by means of the insets. It was imagination that supplemented the material, for the children had not thought of using a real flower as a model. A child drew a daisy with the oval and small circle, adding the leaves free hand. A large crysanthemum was drawn with one side of the quatrefoil repeated many times to form the shape of the flower. It was colored a delicate pink. A wild rose was drawn with the spherical triangle, also a pond lily. A child of six years drew a "star of Bethlehem" by repeating the spherical triangle five times in the form of a circle. She then erased all the parts save those that produced the petals. Another child drew a violet with the oval and small circle and colored the petals a light purple. She could not recall the color of the stamen so put aside her drawing until she could observe the center of the real flower. Dandelions, sun-flowers, pansies, buttercups, clovers, and other flowers were drawn from the imagination, the choice of insets being the circle, oval, ellipse, quatrefoil, and spherical triangle. This step in development was followed by mechanical drawing. Coloring was discarded for a time and accuracy of form and position was observed. Visual perception had grown so keen that often the slightest discrepancy in line or angle could be detected. Many of the designs were complex in form, but the child with deft fingers could trace his work from the beginning. Designs for wall paper, oil-cloth, and carpet were next conceived. A child of seven filled an entire sheet of drawing paper by alternating the medium and small circles. The design was finished in light and dark brown on a background of green.

Inspired by this conception, the other children reproduced patterns they had observed on the walls or floors of their homes or supplemented the material by the imagination. The first attempt to use other material than the insets was made by a child whose brother had taught her to use a compass. She drew a design of concentric circles, coloring them alternately yellow and light blue. Within a short time ten other children had learned to use the instrument, and were also observing circular forms in their surroundings and applying their ideas. One child drew the face of a clock, another a circular picture frame, while a third reproduced a drawing from the panel of a door. The ease and accuracy with which these small children manipulated the compass was astonishing, as were also the designs they conceived.

The work of the first few months had been mechanical, the various drawings being accomplished with the insets or compass. The children, however, had gained a practical knowledge of form, size, and dimension and had also developed their powers of observation to such extent that free hand drawing when first attempted was as successful as their previous work. The first drawing of this kind was made in the early spring upon observation of flowers from a large magnolia tree. A child brought a bunch of these flowers and several children expressed a desire to draw them. One studied the shape of the petals and selected the ellipse; another the oval, while a third child used the spherical triangle, and being dissatisfied with the result erased the flower and *drew it free hand*. There was no disparity in the size, the child represented truly what she had seen, and when the drawing was reproduced on paper the proportion was again correct. As the children realized their ability thus to give expression to the beauties of nature, their interest in free hand drawing became unbounded. They began to gather different kinds of flowers and to study their forms and colors, also to express a desire for information upon plant life. The school room became fragrant with the scent of jonquils, pansies, narcissus, cherry blossoms, violets, and other flowers gathered by the children, from which they selected models according to individual taste.

The natural position of the flowers and their comparative size were a notable feature of the drawings as was also the reproduction of the coloring. The children had never been formally taught the blending of two colors to form a third, but they discovered the possibility themselves in the attempt to reproduce the colors of nature.

Two weeks before the close of school, a child who had brought a box of paints finished an iris in water color. This soon aroused the emulation of the others. The knowledge they had gained of color combination by the use of the crayons was now applied in the mixing of the paints. A child who had painted a shrub was asked what combination she used. "Oh," she replied, "I used crimson and purple and orange and added a touch of brown." One day at recess period a group of four children stretched themselves upon the grass in front of a flower bed. Each child selected a flower, drew it and then colored it. Thus the first out-of-door nature class was formed by the children unaided by any suggestion from the teacher.

The importance of the drawings lies in the fact that they were developed without instruction. The spirit of emulation which aroused the inventive nature of the child also indicated his power for observation. As he was unrestricted in the application of his ideas, he made wonderful progress. The question arises, is there a

possibility of a new era in artistic development as well as in general education through the application of the Montessori principles? Signora Montessori believes in the development of the child through liberty and activity by placing within his environment such material as may promote his welfare and advancement, and it is undoubtedly through the application of these principles that the children spoken of in this article have developed their drawings with the geometrical insets.

INCORRIGIBILITY DUE TO MISMANAGEMENT AND MISUNDERSTANDING.

By CLAIBORNE CATLIN,

Baltimore, Md.

The little girl who is the subject of this study was born in February, 1901, her mother dying at the same time in childbirth. Her father was a somewhat erratic personality, rather a genius in his own profession. The child was left in care of nurses and women relatives who spoiled the naturally masterful, egotistical girl to such an extent that living with her was almost impossible.

The father remarried after a few years. His second wife was in ill health, and the little girl was again trusted to nurses. When six years old, she developed the habit of masturbation, which was not discovered for about a year and a half. Every device for breaking her of it was employed, electric treatment, whipping, shaming, and even a mechanical device especially contrived for the prevention of this trouble. Not one made any impression, as the habit had become too firmly rooted. Visitors at the house were struck by the wolfish expression habitually worn by the child.

Her health was precarious, her temper frightful, her disposition so warped and soured by indulgence and her resentment at interference so fierce, that, in despair, the family sent her away when she was eight, to a trainer who had been quite successful in helping several children with this trouble.

Here for two years the little girl was watched incessantly by day, and at night slept with hands and feet tied. Her luxurious toys were taken from her, she was required to do everything for herself (from dressing herself to washing her own simple clothes), and to assist in the general work. She was not overburdened, but every moment was filled with healthful exercise. She hated and resented such treatment, naturally, and up to the time she came to me she had done nothing unless she knew she would be punished for refusing. Her aim seemed to be to get ahead of people, and hurt them before they thwarted her.

In determining for myself whether reclaiming the child were possible, one thing enabled me to throw hesitation to the winds. I was told that when the little girl's father had whipped her severely, and had followed the chastisement with reproaches expressing his

disgust that a child of his should be capable of such a loathsome thing as masturbation, the child had flashed back defiantly, "Father, I don't see why I shouldn't; I like it, and I'm going to do it!" When I heard that I said, although I had never seen the child, "I'll take her, she is made of good material. I'm sure this is no case of degeneracy, but of misdirected energy."

Just before we met the train by which the child was to arrive, the stepmother showed me a letter from the person who had had her in charge for the past two years, saying that the child had been prevented by force and incessant watching from indulging in her habit, and the writer could certify that only twice in the two years was there any reason to suspect a set-back. She stated that the child had improved physically in every way, but that her temper was still as ungovernable, her eccentricities nearly as pronounced; that she was absolutely wanting in decency, honesty, truth; was cruel, sneaky, filthy. The letter concluded by repeating the writer's firm conviction of the child's insanity, and advising for her sake an examination by an alienist. This was a new development, but I clung to my first reading of the case, though considerably shaken by the earnestness, breadth, and evidently wide experience of the writer.

When the train stopped, a little girl of ten with wonderful piercing black eyes came toward us. I stood well back, my heart beating a tattoo, and tried to get some points about her before she knew my identity. I saw the fox-look in her eyes, and sensed her fright and nervousness over what might be going to happen to her. I also saw that she was "game."

I had accepted the fact that force had been necessary to restore her to health. Without it she would never have been able to respond to me. But the day of artificial means was over; she was physically and mentally able to help herself, and my plan was to call this ability forth. In other words, I believed in her power to help herself as her only real salvation. Furthermore, I knew that we are generally what those about us suggest that we are, so I deliberately assumed that she was what I would make her—decent, truthful, honest, etc., and I always spoke as if she were. I saw that such thoughts, once established, become habits, and when all is said, habit is the secret of our own principles. To accomplish my purpose, I had first to win her liking, confidence, respect; I had to show clearly that I was on *her* side—not in league with the grown-ups. She wore trousers and "middies," so to make the disguise more perfect, I adopted bloomers and "middies" and tied my hair in a plait. Her suggestion that I dock it, so we would be just alike,

will keep my temper." She may or may not have thought of these things during the silence period, but the nature of her suggestions showed she was trying.

After the month of freedom, I proposed to teach her for an hour a day, as a great favor. Naturally, the favor was turned down with scorn. Then I explained how clever people, when they had a disagreeable thing to do, got it over as quickly as possible, and that to live with educated friends out in the world necessitated being educated one's self; therefore the obvious course for a person who called herself clever was to tackle the lessons at once. This brought her around, for her vanity could not stand the strain of having her cleverness possibly called in question.

We decided that the hour right after breakfast was less *inconvenient* than any other. If she failed to appear on time, I was among the missing when she did, and could not easily be discovered. When found, association with me was anything but the pleasant thing it might have been. This was wormwood. The next day she was on hand ahead of time.

I confess, my chief means of winning her has been to make myself so attractive to her (without appearance of effort) that any cessation of our friendship was agony to her (and naturally, painful to me also). I rarely told her she must do anything. I either asked her as politely as if she were a total stranger (no matter how rude she had been just before that particular instant), or assumed she would do it as a matter of course. If she failed me I absented myself. I hardly had to resort to this more than once for the same offense.

But to return to the hour of school. Truly it was equal to a day's hard labor. She disputed everything, argued over the most insignificant detail such as,—if she had written "there" and I gave her "then" she wrote it under "there", like this

"hen."

When I insisted on having another "t" she persisted that one "t" would do for both words.

She honestly believed there was nothing she did not know. A surreptitious glance back into my own childhood recalled a state of mind so similar that her egotism failed to trouble me as it might another less self-important person. However, teaching the simplest rule of multiplication to a young creature who fairly snorted with indignation that any of her knowledge (which of course was *nil*) was being questioned, meant a long and devious route.

"I know it," she would say. "Why should I put it down?"

"If you know it," said I, "why not put it down?"

Her answer invariably was "Oh, I know it, all right, but it's too much trouble to show I know it."

The result was, I decamped or threatened to, whereupon she laboriously set her face toward the inevitable. She soon learned to recognize that disagreeable quality which I possessed so super-abundantly—inevitableness—and protestingly submitted. I met her egotism eventually, by saying that I was willing to help her in this way only on the condition that she make it pleasant for me. Then if she were disagreeable, I left her, nor would I "chum" with her until repentance was obvious, not only in actions, but in speech which entreated me to teach her the next morning. Gradually she came around, and lessons became almost enjoyable.

We dined alone. If she were disagreeable—as she frequently was—(kicking the table, or throwing bread, or picking her food up with her fingers, or introducing subjects which she knew were distasteful) I left the table, instead of asking her to go, and she had that most uncomfortable, sinking sensation anyone must have when conscious of having robbed another of his daily bread.

One day she began kicking the table leg vigorously. As I did not apparently notice, she put her head as nearly in my face as she could, and leered maliciously. I then took notice of her, and remarked mildly that in order for two people to live together each one had to give up anything which might be annoying to the other. Quick as a flash, she said, "Well, then you give up the joy of stopping me from kicking the table." The uselessness of arguing while she was in this mood, coupled with the overwhelming sense of the joke being on me, kept me silent until I had finished. She continued kicking meanwhile. As I left the room I said, "Since you enjoy kicking the table, I will not deprive you of the joy of it. Please be good enough to keep on kicking for fifteen minutes." And there she sat, pegging away, while I found a safe spot in which to give vent to my laughter. She afterward came and talked it over and agreed with me that she had been both ungenerous and silly.

Very soon after the first two weeks I taught her the "promise" ideal. The following is also a fair illustration of my method of bringing to her notice many ethical questions. One bright morning I said, "Chum, I'm sorry not to be able to go swimming with you today, but I've promised to help Mrs. A make a frock—so you see, I'm helpless!"

"O Sister!" burst from a thoroughly disappointed small being, "I'm so sorry—for I do *so* like your society!"

"Yes, I know," I interrupted, not giving her a chance to sug-

gest a means of escape, "and I'm glad you do, but of course, I know you and I feel just alike about a promise; that it's about the most sacred thing there is. I suppose, too," I went on, "you're just like I was when I was little—if they could get me to promise anything it was as good as done—but," I said, trusting that this part would appeal to her anyway, "it was mighty hard to get me to promise."

She jumped at the bait. "That's just the way I am!" she said.

And it was literally so. If I could get her promise, much was accomplished; naturally I was careful not to let her promise so many things that she could not remember them. This is exceedingly important. It was not a question of whether she could keep a promise, so much as forming the mental habit of never consciously breaking one. I would never advise making a child, at this stage, conscious of breaking a promise if he seemed absolutely oblivious of having done so. Even then, if he must be reminded, I would always emphasize the fact of "forgetting," and not the "promise-breaking" itself. I always say, "Of course you only forgot to do so and so, but forgetting a promise is almost as serious as breaking one!" If I could get her promise, I rarely needed to think twice about the matter. My original device "that it is very hard to get her to promise" usually plays a part, but in the end it only emphasizes, and gives her time to think over, what is involved in the promise she is about to make.

After I had established her confidence in my wider experience, I asked her to "promise" to obey me when I asked her to do so. I promised in turn never to ask this unless it were necessary and agreed to explain my reasons when I could, after she had done what I requested. When I didn't she must show her trust in me by going without explanation. At first she obeyed, but sometimes she took half a day to do so. I let this go for a while, and then I asked her to put "promptly" into her code. After much deliberation, she agreed. Next I asked that "cheerfully" be added. To this she only agreed to promise "to try." This has never been expanded, as can well be imagined.

When I wanted a thing done, I discussed it with her and then asked her to do it. If she had promised beforehand she did it without any objections, and I never waited to see the complete act. Once she said, "How will you know whether I do this or not?" (This was before the promise stage.)

"Why," I replied, "I shall ask you, certainly you are the person who is best able to inform me." She grinned sheepishly,

but I knew she would tell me. Of course, I never asked, never intended to.

And yet, I was told she had no idea of honor, truth, etc. I have never known her to lie but once, and that was due to my mismanagement of the situation. Similar mistakes of adults often cause children to form untruthful habits. With this child any relapse was always due to my mistake.

Of course, she had a number of poses. One of them was telling "bluggy" stories and then waiting for horror to burst from her unthinking audience in the form of "O you dreadful little girl!" Again, I recalled many a scene of carnage from my own red past, in which I had enjoyed the same spoils. So I decided to test the "blood pose." She began in this way, "I *love* blood, don't you, Sister?"

"Yes," said I, "I do!"

Surprised, she said, "But I love lots of it, streams of it, running round!"

"Oh," said I, determined to see it through, "that's nothing! I tell you what you do. Go down stairs and get the longest, sharpest knife you can find, and if you can't get a sharp one, take one down and have it sharpened—I'll wait for you—then come back and we'll go down and have a regular bloody bat. We'll kill and cut up a pig or two—oh, you needn't worry, I'll pay for it—" I stopped, for the amazed, white, horrified little face before me proved that I was right and that there was nothing in it but a pose.

"O Sister," she gasped, "I *couldn't!* I should die! Oh, don't make me!"

"Well," I said briskly, "then don't ever talk to me of loving blood again." And she didn't,—the nearest approach being a surreptitious remark at table that she liked *rare* beef.

All through, I tried to have her form her own decisions, even to deciding on her hair ribbons and such trivial questions. She had to accept my decisions instead of her own merely when her experience had been too limited to enable her to have opinions, then she voluntarily (not always willingly, of course, but because of her confidence in and liking for me) accepted my suggestions.

Game-playing was an arduous undertaking, because she disputed or jeered at every turn in the game. At last one day I put down my racket, after a specially spiteful remark on her part, and said, "See here, I'm not going to play out of my class. I'm a sport! What are you? Do you know what a sport is?"

"I'm not sure," she replied.

"Well, it's one who plays fair, and—is—a—good loser. And

don't you forget the last part, for that's the hardest thing about it. Now, are you a sport?"

"I don't think I was born one," she said, thoughtfully, "but I might grow to be one, couldn't I?"

"It doesn't make any difference," I answered, "*what* you were born, you can make yourself anything you wish!"

"Then I'm going to play in your class, Sister," she ended. And by a tremendous effort she has achieved being "a good loser" in most affairs, not only in games. Her success is shown, practically, in the changed attitude of her own kind toward her. From being hated of all children, her popularity has come to be an acknowledged fact. I could not have offered her anything else that would appeal so much to the splendid stuff in her. I believe that most children could be appealed to in this way, and if they failed to have the "material" at the start, such an appeal might develop it.

The one big idea I kept before her is self-control in every form. She was as anxious as I to perfect herself in that respect. For we both believed she had a big work ahead of her, and that together we were getting ready for it. I told her that every time she controlled herself in any way, she was growing strong for the time when she would need it for her work. On her control in these minor things, I based her capacity for control when the habit of masturbation might momentarily attempt to reassert itself, though of course I did not tell her that. Why could we not teach all children "control" with their big life work as a goal? If we only realized it, the identical things that appeal to us appeal to these misunderstood little folks.

I was not long in enlisting her sympathy and interest in the fact that every capable human being ought to be an economic unit. It was quite amusing to hear her scornful rejection of the term "little lady" conferred on her by an unsuspecting old gentleman. I had given her Emily Putnam's definition of a lady—"The female of the class in power"—and had read her a good deal of the lady's parasitic condition; consequently, no one could have insulted her more than that pleasant old man. She wants to earn her bread. In fact she does earn her "wages" out of which she supplies all her small wants.

I was told she had a frightful temper, and when she said, in her boastful way, expecting the usual hysterical horror over such a statement, "I have a dreadful temper, Sister!" I replied, "So have I, and we wouldn't be worth a picayune if we hadn't! But we control it, of course, don't we?"

"Of course we do," she replied, sweetly—her attitude abso-

lutely changed. As a result, I have never seen a trace of violent temper—only an occasional grumbling or arguing or tears, which vanished if I left her to silence with an admonitory “O, be a sport, Chum, a *good* loser!”

I neglected to say in the beginning, that after her first profession of friendship I told her the “life story” as I had learned to tell it from Miss Laura Garrett. She had been asking all kinds of questions, which I would not evade. I had planned to tell it to her, but not quite as soon as I found it necessary. My theory is, that a child who is intelligent enough to ask questions is intelligent enough to understand. At any rate, a clean knowledge of the subject cannot possibly be as much of a risk as a natural curiosity unwholesomely satisfied.

Later on, I explained how this sex energy, wasted in indulging her habit, was meant to go into the building of strong muscles, good brains, steady nerves which would enable her, and every other child, to do the big work each had come expressly to do. Also, that her very knowledge on this subject made it possible for her to help many whom few others could understand. This conviction is very precious to her, and has given her a feeling of respect for herself instead of the shame she had always felt. It was for some reason, after all, that she was taught the habit, she feels—possibly that she may help others overcome it, when *she is old enough to know how*. I remember the first thing she said when the wonderful truth first flashed upon her—“Why didn’t they tell me this before? Now I see why I shouldn’t have the ‘habit,’ ” (as she always calls it). I think it made her my friend for life that day.

The first four months were spent on an isolated farm, the last two being varied by visits from relatives, who stayed only several hours at a time. The visits always excited her, and threw her back into self-important ways, but on the whole she got a great deal from them. At the end of the four months, I decided to try her in school and with other children, so we boarded in a village and the little girl attended a small private school for eight months. During the last two months, we lived in the school, as I wished to multiply complications as much as possible and note results.

During the year, which ended June 1, 1912, she went home five times; on four occasions I was with her part of the time. Each trip there was marked improvement. We discussed her failures and she put the resultant wisdom into practice. That is the wonderful thing about her—once shown the reason for a situation, she will handle it herself. She is now as lovable, kindly, and sweet a little girl as could be desired. Every one in the school is fond

of her and thinks she is an extraordinarily "good" child. Living with her has come to mean real companionship.

Her control of herself causes me constant amazement and respect. She has far more than I can boast. I heard her, one day, tell a child who was asking what would be done to her if she did so and so, "I don't get punished, I just do a thing because it's the way folks do."

That's the idea. She is a human being, responsible, respected and self-respecting; interested in many things and looking for a chance to do a good turn and render her share of kindness to the world, which she now regards as her friend, whereas when a hunted little rebel, with no interest outside her scowling self, she had hated, defied, and hindered that same world all she could. She is as anxious to be kind now, as she was vicious before. She came to me recently, after a conversation on Pharisees, which we had held a few days previously, and said, "Sister, I realize I still do the nice things partly to enjoy telling about them, but I hope, before long, not to mention them. Until then, may I tell you?"

"You just bet you can," I said. This was apropos of her having taken a box of ginger cookies to school for several days hoping to meet and cheer a certain ancient man whose allowances of good things, she surmised, was small. She does this also with the money she earns.

She kept an account of herself and fined herself if she failed to make good. She left notes to this effect on my desk. I find, "Dec. 10th, 2 cents—I pouted"; "Feb. 2nd, 1 cent—I was not nice." I explained early that there are laws in the world and that there are penalties for breaking them; keeping them is the concession one makes for living with other people. So she willingly and without further suggestion from me pays her fine for the laws which she breaks in her own small world.

It is easily seen that her defectiveness was only because her energy (of which she had an enormous supply) was misdirected and misused; also, because of her misunderstanding and mismanagement on the part of those in charge of her. Her mind is one of exceptional quickness and brilliancy, with a reasoning faculty rarely seen in children (perhaps it is so rare, because so infrequently called forth). She has a fine sense of justice and an intense desire to make good. She quickly repairs an injury she has inflicted. She is very emotional, easily influenced, still inclined to be overbearing and egotistical, but for the most part, kindly, lovable, thoughtful, earnest, loyal, animated by that intense desire to be liked which is innate in all born leaders.

EDUCATIONAL DEVICES.

Thorough medical examination to find actual condition.

Absolute cleanliness (which included a cold bath in morning and hot at night, with a thorough cleansing with *cold* water, by the child herself, of the parts affected).

Establishing regular and healthful excretory functions.

Plenty of sleep with careful watching at bed time, and just before rising, which are the danger periods. I believe the habit of rising *immediately* upon waking to be invaluable here.

Regular hours for bed time, meals, lessons, etc.

Breathing exercises before breakfast.

Relaxation period of 5 minutes (beginning with 2 minutes and gradually increasing to 5) during which a constructive thought suggested by pupil was held.

Absolute freedom at time of play.

Gardening.

Pets collected and cared for (teaching kindness).

Regular employment.

Regular daily program on farm for four months.

June 1, 1911, to October 1, 1911.

Rising at 6:45.

Bath.

Carrying milk to next house, feeding pets.

Breathing exercises.

Breakfast at 8.

Clearing table and wiping dishes.

Making beds.

Silence period, 5 minutes.

Lessons.

Swim or walk.

Dinner at 1:30.

Reading for an hour.

Walk in woods, or drive to nearby village.

Tea.

Walk and talk.

Bath and bed time, 8:30.

During the next six months we boarded in a village outside the small private boarding school which she attended. Playing with children up to this time had been less difficult, but yet far from satisfactory.

Program for these six months (October, 1911, to April, 1912).

Rising at 7.

Bath and exercises.

Skate or run.

Breakfast at 8.

Bed making.

Silence.

School, 9-1.

Dinner at 1.

Ice skating, sledding, sliding, walking, or playing with children.

She was frequently sent out to find means of amusement, as she lacked initiative in entertaining herself. This was at first a great trial, but she can now easily fill in an afternoon.

Study period 5 o'clock.

Tea at 7.

Bed at 8.

I began now to leave her occasionally to go to bed alone, but generally I sat with her and read or wrote until she was asleep.

We moved into the boarding school for the last two months, and the program was more or less a variation of the one just given. I still watched her, but never let her be aware of it. My principle has been to make her feel my trust and I am sure it was better to risk a good deal rather than have her guess that she was being watched.

Of course this is only a year's work and it remains to be seen how permanent it has been, as she is *now* only twelve. Much depends on the power of those in charge of her, to re-enforce the habits formed until they become absolutely stable. This particular child seems to have been richly endowed at the start with unusual qualities, but who shall say what the possibilities of any of these misunderstood and mismanaged little folks are until they have been given a chance really to express and develop themselves?

REVIEWS AND CRITICISM.

Changing America. By Edward A. Ross, Professor of Sociology in the University of Wisconsin. New York: The Century Company, 1912. Pp. 236.

Analyzing and interpreting the present is unquestionably more difficult and hazardous than moralizing about the past, but as Mr. Ross points out, it is only "living tendencies that man can work with, curb or guide."

In the present-day tendencies in America, Mr. Ross sees the future triumph of democracy. He believes that the swarming in of low-grade immigrants and the mal-distribution of wealth are manageable things, and he sees in the spread of socialism only one more and that the latest effort on the part of the people to control government for their own benefit.

In the falling birth-rate he sees, not inevitable ruin necessarily, but our deliverance from the over-population horror, the only grave danger being that we may come to standardise the dwarf family of two or three children.

Mr. Ross points out as one of the main causes of increasing divorce, the economic and intellectual progress of women. As remedies he suggests, making it impossible to marry on too brief an acquaintance, the training of girls in domestic arts, and—as intemperance figures in nearly one fifth of the divorces—a strengthening of the temperance movement.

A plea for laws decreeing a certain standard working-day suited to the health and strength of the average young woman, comes with added force at the end of a chapter which graphically sets forth the cost to society of wearing out women in our factories and endangering the health and lives of the future generation.

His arraignment of commercialism and of "Big Business," and the ideals of "Big Business" is thorough-going and convincing, his remedies practical and far-seeing. He shows that not the least evil connected with "Big Business" is the effect upon our newspapers. Mr. Ross voices what many citizens suspect but few have the courage to avow—that the daily newspaper fails to give the news, and that news is deliberately being suppressed or distorted. For this of course the growing commercialism of the press, its subjection to outside interests, and its increasing dependence upon its advertisers are responsible. His plea for an endowed newspaper has both point and force.

The middle west's lead in democracy is carefully analyzed and set forth. Of the west, Mr. Ross says—"It is not to be reconciled to social stratification by any amount of 'welfare work' in the mills or 'social work' in the tenements. It knows philanthropy is good, but it thinks that the lynch-pins of society ought to be *rights* and the *spirit of square dealing* rather than *gifts* and the *spirit of kindness*."

There appears to be little doubt that the western states have gone further than the eastern on behalf of labor, but in no direction has this re-assertion of democracy gone deeper than in their state universities, wherein is shown the people's determination to bring about a greater equality of opportunity. The offer of a college course at a nominal fee has met with a tremendous response.

Fewer than half the students in Massachusetts colleges come from the Bay State, while a third of the Illinois youth anywhere in college and two-thirds of those of Wisconsin are enrolled in their state's university. To those who listened to the able exponents of the Wisconsin Idea this winter in Philadelphia, it will not be a surprise to hear of the amazing extension of the university's work to cover the entire state, and that thirty or forty of their faculty are connected with the non-political public service of Wisconsin, serving on state boards and commissions or aiding the state in other ways by their expert knowledge. To those contented, and we might add in passing, hopelessly illogical stand-patters, who in one breath condemn the Wisconsin Idea as an effort to "vulgarize knowledge," and yet aver that Pennsylvania is really doing the same work under a different name, we recommend Mr. Ross's statement that "Pennsylvania, though one of the oldest and richest states of the Union, as a whole has never come into a conception of education from the point of view of the whole people, and as a consequence its public school system is still in its rudimentary stage and its normal schools and many of its colleges are engaged in the work of secondary education."

One closes Mr. Ross's book with a feeling of having thrown wide a window, of inhaling some very invigorating air, and of looking out for a brief space on an interesting, wide, and thought-compelling view.

E. R. W.

NEWS AND COMMENT.

Meeting of Experimental Psychologists.

The Experimental Psychologists will meet this year at Columbia University on Thursday, Friday, and Saturday, April 9-11. The scientific sessions will be preceded by a dinner on Wednesday evening, April 8th, in honor of Professor James McKeen Cattell.

Dr. George W. Twitmeyer Died February 21, 1914.

Dr. Twitmeyer was born on a farm in Center County, Pa., June 9, 1849, and received his elementary education in the country schools. He secured his first certificate to teach in 1863, when only fourteen years old, but did not begin teaching until after his graduation from Rebersburg normal school, a private school which is no longer in existence. From the time of his graduation until his death he was continuously in public school work, excepting for a period of two years when he was headmaster of the McEwensville Academy, Pa.

His first principalship of schools was at Watsontown, Pa. He was principal of the Honesdale, Pa., schools for sixteen years, superintendent of schools

of Bethlehem, Pa., for four years, and superintendent of schools of Wilmington, Del., for the fourteen years immediately preceding his death. He held the honorary degree of M.A. from Franklin and Marshall College, and M.S. from Mansfield State Normal School. At the latter institution the degree was awarded on the basis of an examination, without residence. In 1903 Lafayette College conferred upon him the degree of Ph.D., his thesis being entitled, "Treatment and Training of Backward Children in the Public Schools."

Three years ago Dr. Twitmeyer was appointed by the Governor of Delaware as a member of the State Board of Education, and upon the organization of this board he was made chairman for a period of seven years. He was largely instrumental in putting through a revision of the school laws of Delaware, which completely changed the method of administration in the public schools and provided also for the reorganization and expansion of Delaware College. About a year after his appointment to the State Board of Education, he was made a trustee of Delaware College. Two years ago he was appointed by the Governor on a commission to formulate plans for the organization of a woman's college to be affiliated with Delaware College. At the time of his death the work had reached the stage of erection of buildings, the selection of a faculty, and the draughting of a curriculum. The Woman's College will be opened formally in the fall of 1914.

Dr. Twitmeyer was the author of numerous magazine articles, including one in *THE PSYCHOLOGICAL CLINIC* for June, 1907, to which reference will be made later. He was much interested in the pedagogy of Sunday school instruction, and took an active part in the movement for the grading of Sunday school lessons and the better training of Sunday school teachers. As an institute lecturer he was well known for many years throughout the states of Pennsylvania, New Jersey, Delaware, Maryland, and Ohio. He was a director (by election) of the National Education Association. At the summer school of the University of Pennsylvania in 1907, Dr. Twitmeyer took part with several other educators in a general course on Educational Psychology, giving one week's lectures on the special topic, "Diagnosis and Treatment of Backward Children in Public Schools.—The application and personal working out of the clinical method in the solution of the problem by the superintendent of a school system.—Results of the method in the Wilmington schools."

The distinction of having been a pioneer in this field is only one, although an important one, of the many laurel wreaths which will be placed upon Dr. Twitmeyer's grave by those who hold him in honor and affection. I shall always remember the vigor and vitality with which Superintendent Twitmeyer attacked any problem, whether it were one of study or administration. The common schools of Pennsylvania and Delaware may look with pride upon the record of this educator, whose career was rounded in their service. A school man through and through, Dr. Twitmeyer could scarcely be matched in this country for initiative, intellectual grasp, and a willingness to learn and apply whatever science afforded. As late as last summer he went to New York to study administrative statistics under Dr. Ayres, and this fall entered for work along the same line at the University of Pennsylvania under Professor Updegraff.

Those who attended the recent Richmond meeting of superintendents must have been struck by the predominance of the scientific note to be heard in the educational discussions. Clearly the profession of education has passed over into the scientific stage. Superintendent Twitzmyer was a leader in this progress, for since the year 1895 he was definitely committed to the scientific study of educational problems.

While principal of the Honesdale, Pa., schools, Dr. Twitzmyer gave me the first encouragement in the work in clinical psychology, just initiated at the University of Pennsylvania, which I received from a public school man in active service. In 1895 I was conducting courses in child psychology and making a few tentative efforts toward the clinical study of individual children. Dr. Twitzmyer was not only the most active and appreciative student of that year's summer school, but he seized upon the clinical method and applied it himself subsequently in the schools of Bethlehem and Wilmington. He put together the clinical records of 1487 cases of retardation, and induced his teachers and principals to assist in examination and corrective training. The brief summary entitled "Clinical Studies of Backward Children," published in *THE PSYCHOLOGICAL CLINIC* for June, 1907, is the first report of a clinical investigation of the pupils of a city school system.

LIGHTNER WITMER.

The Psychological Clinic

Copyright, 1914, by Lightner Witmer, Editor.

VOL. VIII, No. 2.

APRIL 15, 1914

A STUDY OF THE SCHOOL INQUIRY REPORT ON UNGRADED CLASSES.

BY ELIZABETH E. FARRELL,

Inspector of Ungraded Classes, New York City, N. Y.

THE NUMBER OF FEEBLEMINDED CHILDREN IN NEW YORK CITY SCHOOLS.

On June 1, 1911, an inquiry into the condition of the schools of New York City was ordered under the general direction of a committee of the Board of Estimate and Apportionment, consisting of Hon. John Purroy Mitchell, President of the Board of Aldermen, Hon. William A. Prendergast, Controller, and Hon. Cyrus C. Miller, President of the Borough of the Bronx, and under the immediate direction of Paul H. Hanus, Professor of Education at Harvard University, who was called upon as an authority of national distinction.

Associated with Professor Hanus as chief investigator were a number of educational experts employed to investigate the aims, methods, and results of the work of the public schools of New York City. As one of these experts Dr. Henry H. Goddard, Director of the Department of Psychological Research of the New Jersey Training School for Feeble-minded Boys and Girls, was appointed to investigate the ungraded classes. His report has been given to the school authorities of New York City and to the public as the results of a scientific investigation into the number of feeble-minded or otherwise exceptional children needing special educational treatment, and on the educational facilities and methods employed by the New York Schools. The present article is a critical analysis of the scientific procedure and conclusions reached by Dr. Goddard as the special investigator of the ungraded classes and embodied by him in his report to the School Inquiry Committee.

In this analysis of Dr. Goddard's report I shall present for consideration statements made by Dr. Goddard in his report as conclusions from facts quoted from the report as the basis of these conclusions; and I shall enter upon a discussion of the scientific accuracy of the facts as such, the validity of the methods employed to obtain facts of scientific value, and the justifiability of the conclusions obtained from the facts in view of the methods and also in view of facts otherwise known but not included within the report. I proceed first to consider the conclusions, facts, and methods, relating to the number of feeble-minded children in the New York City schools.

The following quotations from the School Inquiry Report relate to the number of feeble-minded children tested, the test applied, and the estimated percentage:—

"The most extensive study ever made of an entire public school system of two thousand has shown that 2 per cent of such children are so mentally defective as to preclude any possibility of their ever being made normal and able to take care of themselves as adults. (See *Pedagogical Seminary*, June, 1911, 'Two Thousand Children Tested by the Binet Scale'; by Henry H. Goddard.)" (Page 11.)

"Since this result was obtained by the use of the Binet-Simon Measuring Scale of Intelligence, it stands or falls with the validity of the scale. A word in regard to the accuracy of said scale: the Binet-Simon Measuring Scale of Intelligence is the result of years of study by one of the ablest psychologists of modern times. The scale itself has been tested and retested on groups of children large and small. Practically the only valid criticisms that have ever been made of it have been that it might be improved in some of its details. It has never been rejected by any one as useless. The only seriously adverse criticisms have been made either by persons who have not used the scale on more than a handful of children or who have not used it intelligently. Those persons who have used it on large numbers of children have declared that the more they use it the better satisfied they are with it." (Pp. 11, 12.)

"While no one claims for it (this system of tests) that the results obtained should take precedence over all other evidence in the case of an individual child, no one has denied that it is able to give us an accurate percentage of the normal, backward, and precocious children in any group. With the record that it has made, any attempt to ignore the results as shown by this method would savor strongly of prejudice." (Page 12.)

"It is indeed startling to read that 2 per cent of school children are feeble-minded. But every new and unexpected discovery is more or less startling. And in this case the findings are not without corroboration from other sources, for those who are willing to fairly face the facts." (Page 12.)

"According to this estimate of 2 per cent there are 15,000 feeble-minded children in the public schools of New York. The only escape from this conclusion would be the assumption that in New York City there is a better condition of things than exists in a small city and rural population in southern New Jersey. Certainly one who is familiar with conditions in Greater New York would hardly claim that such was the case." (Page 12.)

The facts upon which the above statements are based are as follows:—

“Three ungraded classes were examined in toto.” (P. 12.)

“We tested also eighty-one children in the special or E classes.” (Page 12.)

“We examined twenty-two children in the special D classes, * * *.” (Page 13.)

“In one case the entire class was examined—at least all that were present that day, it being a holiday for some of the children—and the eleven present were all feeble-minded; and the teacher assured us that those who were absent were, in her opinion, much more deficient than any of those present.” (Page 13.)

“Besides these groups we have also tested a few children from the regular grades in each of five schools, one of these schools already having an ungraded class. Of one hundred and fifteen children tested in the five schools, thirty-three were distinctly feeble-minded, and thirty more were border-line cases. These were, of course, selected cases.” (P. 13.)

“Furthermore, we examined, at the request of the teacher, in one high school, five cases that were selected by her. They all proved to be feeble-minded.” (Page 14.)

The test used by School Inquiry Committee in determining the number of feeble-minded children in New York City public schools was the Binet-Simon Measuring Scale of Intelligence. The method of testing the children is not discussed in the report.

DISCUSSION (NUMBER).

The validity of the statement that 2 per cent of New York City public school children are mentally defective may be established in five ways.

1. A sufficient number of children must have been examined to warrant the conclusion that 2 per cent of New York City public school children are feeble-minded.
2. The distribution of children examined throughout the city and within the school grades must have been wide enough to insure fair and adequate “samplings” of the whole school population.
3. The test used must have general acceptance if the deductions made are to be unquestioned.
4. The method of testing must be such as to discount the chance variation in the reactions of school children.
5. Comparison with similar studies must show that the deductions are probably correct.

According to the register there were 22,378 children enrolled June 30, 1912, in E classes. Of these only 81 or $\frac{81}{22,378}$ of one per cent were examined by the School Inquiry Commission.

"Grade E classes are to afford pupils over the normal age in the grades below 7A an opportunity to make special preparation for admission to the 7A Grade, and by so doing to shorten the time necessary to complete the work of the elementary school."¹

Eighty-one special E class children (over-age children who expect to complete the elementary school course) were examined. "Of these, twenty-nine were feeble-minded, being from four to eight years behind; fifteen were three years behind; sixteen were two years behind; fourteen were one year backward, and seven were at age" (page 12). In another part of the report the following statement is made: "There is every reason to believe that a goodly proportion (with the possibility that all) of the fourteen who were two and three years backward will prove to be feeble minded; for we have discovered from our study of mental defectives that there is a type of child that slows down until about the age of nine or ten, and then stops; so that many children of eleven and twelve who, by the test, are only two years backward are found to be near their stopping place, and do not develop after that. By the time they are thirteen or fourteen they reveal themselves as distinctly feeble-minded" (page 12).

According to this the conclusion must be that of the eighty-one special E class children examined, sixty who are, according to the report, two or more years backward are feeble-minded. In other words, 75 per cent of all special E class children examined are feeble-minded.

In this same discussion, without presenting any facts to substantiate it, the following statement is made,—"It is not probable that any such percentage holds for the total E classes. * * * It would be a very conservative estimate to say that * * * but 10 per cent of these were defective" (page 13). The question comes,—Why 10 per cent? Why not 15 per cent, or 5 per cent, or any other percentage?

There were 2041 children enrolled June 30, 1912, in D classes. Of these only 22, or $\frac{1}{90}$ per cent, were examined by the School Inquiry Committee.

"Grade D classes are to accommodate pupils who are soon to be fourteen years of age, who desire to obtain employment certificates, and who have no prospect of completing the elementary school course."²

¹Elementary School Circular No. 7, 1911-12.

²Elementary School Circular No. 7, 1911-12.

Twenty-two children, therefore, in the special D classes (over-age children soon to be fourteen years of age, who desire to obtain employment certificates) were examined. "Of the twenty-two examined twenty-one were from four to eight years backward, being feeble-minded. One was three years backward, possibly not feeble-minded" (p. 13).

According to the following statement (made on page 12),—"There is every reason to believe that a goodly proportion (with the possibility that all) * * * who were two and three years backward will prove to be feeble-minded," the D class child who is said to be three years backward is feeble-minded. Therefore it appears 100 per cent of the D class children examined are said to be feeble-minded. Then follows,—"These were in two schools. In one case the entire class was examined—at least all that were present that day, it being a holiday for some of the children—and the eleven present were all feeble-minded; and the teacher assured us that those who were absent were, in her opinion, much more deficient than any of those present. Likewise in the second class, where there were twenty-seven enrolled, and eleven were examined, all were from five to eight years back, therefore feeble-minded. In this class also the teacher assured us that the worst cases had not been tested—only the doubtful ones. But ignoring that, and taking only the facts, we still have ten out of twenty-six who are feeble-minded. That is almost 40 per cent."

It must be remembered that twenty-two children in these D classes in two schools were examined. If the same logical principle held throughout the report, the whole number examined should be said to be feeble-minded. Since the children who were absent on the day the test was given were never examined by the investigator, he is not allowed to base any statements upon them in a scientific analysis. In the same way the investigator is not to be permitted to change the percentages he arrived at as the result of examinations and substitute 40 per cent as the number of D class children who are feeble-minded.

June 30, 1912, in the regular grades 578,407 children were enrolled. One hundred and fifteen children or $\frac{1}{5}\pi$ per cent of the total number were examined. Of these the Committee says, "thirty-three were distinctly feeble-minded, and thirty more were border-line cases." No statement as to the number of years backward, such as that given in connection with ungraded class children and special E and special D class children, is made in connection with this group of regular grade children. It is impossible, therefore, to analyze the results given. However, according to the report 30 per cent of the regular grade children examined are feeble-minded.

DEPARTMENT OF EDUCATION.

Name _____

PUPIL'S RECORD:

PUPIL'S RECORD:

Born Aug. 24, 1895 Emp. Cert. No.
S. Va. I. 7B Gen.

PAPERS OF THE AMERICAN ACADEMY IN LONDON 17

Attended _____ days from 18th birthday to end of term.

No. Street Fl. No. Street

101 H. 9 St.

The report adds,—“Also many feebleminded children who are crippled, blind, or deaf, have been shut out of the schools” (pages 14, 15). As a matter of fact no such children were examined by the Committee in New York City.

HIGH SCHOOL STATISTICS.

Although on June 30, 1912, there were 41,934 children enrolled in the high schools, only five high school children had been examined by the School Inquiry Committee during the year 1911-12, all of whom were diagnosed as feebleminded. The City Superintendent therefore directed that the five children considered feebleminded by the Committee be examined by the Board of Education physician. On the day set for this examination it was found that one child was absent because of the illness of her mother; one had been excluded June 30, 1912, under the ruling of the Board of Education as to the attendance of non-resident pupils; two had left to attend a business school; a boy, L—E—, was examined. His examination was made according to the procedure followed in the examination of all children proposed for an ungraded class. The examination deals with the following facts in the order given; the school history as recorded by the school principal and covering the years beginning with the kindergarten; the medical examination,—mental examination; family history and individual development. A study of this boy's school history was first undertaken. The elementary school record is given on page 34.

According to the record this boy was kept more than the average time in the 1A and in the 2B grades. With these exceptions his progress through the elementary school has been uniformly one term in each grade. This would seem to be at variance with the implication in the following: “Asked how feebleminded children came to be in the high school the reply was, ‘They are not allowed to stay more than two years in any one grade, and so they are promoted whether they are fit or not, and in that way get into the high school’” (page 14).

A consideration of L—E—'s high school experience reveals the following:

“L—E— is a slow pupil, very faithful and industrious, and the progress which he is making is very encouraging. He has been with us two terms and has credit for one term's work. In biology, both terms, his term mark has been 67. Master E— was in the same class in German with W—S—, whose father has complained of the instruction in German. This class was under a substitute, Miss —, the first term and under Mr. — the second term. E—'s mark the first term was 20; the second, 60.”

SPECIAL MEDICAL EXAMINATION

P. S. — High School Borough R — April 9th, 1913Name Dr E. Born August 24, 1896 — 16 yrs. W — P. J.1. General Condition F.A. Anatomical Tall, -level' F.Cranium S. wrinkles over frontal region - sinus 57 cm. v. swell of nose.Facial Asymmetry Contour of face rough.Palate R. N. Surfaces were uneven.Teeth Upper are flat also abnormally - atTongue C. Lips - May E. Ear.Eyes ? Neck - aboutEars R. N. faulty, lost 20 Lead. 147. 200Limbs 8" right, R. hand - distal joint stiff -Skin Cyanotic changes about armpit and as result ofBody in General Exercise - Gravel base ballB. Physiological lip & cheek - rear ear.1. Motor Function F.Tics ? Tremors c. < clapping handsEpilepsy No history of Nystagmus -Promptness Slow (backward) Co-ordination g.Prehension R. 63 L. 55 Gait -Speech Voice is changing Fatigue -2. Sensory Function General intelligence g. Reasoning g.Eyes R. - 7 L. - 7 Ears R. 11 L. 113. Condition of Heart > erratic Pulse 124 firm.

C. Psychical

Balance Proportion Moral SenseAttention G. Memory ? WillPeculiarities Very self conscious Shy - bashfulD. Development—Att. Diseases Measles & DiphtheriaE. Family History :Births 3 — Miscar. — Deaths —Cause of Diseases F. M.Our brother in the U.S. West on account of
ill health - aged 20 sons - Thompson Surgeon
Our brother is a carpenter aged 26 yrs. Medical Examiner.

Recommendation :

Medical care Should continue
in regular work for the present
Engaged to care

Inspector Ungraded Classes.

Initial Examination L- E-

Selfconscious, especially as upon examination of mouth - which disclosed an upper set of false teeth - The plate fitted his mouth imperfectly ~~so caused~~ a peculiar indistinctness of speech.
Was very shy and reticent about having stethoscope used in examination of his heart. This seems to be a natural pubescent shyness however -
When interested talks rapidly - sometimes good thought clear.

Enjoys football - "is trying for the team but thinks he will ~~not~~ make it" Shows in manner of speech likes his German but says he "doesn't study as hard as he might" "enjoys the study of Physiography but

Neurological Examination -

This is meager because of inability to obtain definite data - other than the lad's own statements.

Says he "is nervous" especially when taking along quiet - Was very nervous before he came to High School - feels that he has gained a lot by standing up before the fellows and reciting. Has "quiet coffee" because it relaxes him nervous also - on medical doctors

advice has "cut out all events for time"

Sleeps well, has occasional pleasant dreams of water ~~and boats~~.

Is introspective ~~and~~ apprehensive about his health - admires one of his brothers very much because he is so strong and well - ~~and~~ his great-aunt is to believe like him.

Isabelle Thompson (Quartermaster)
Medical Examiner

The medical examination of L— E— was then made. A copy of this is given on page 36.

Under date of June 28, 1913, the High School Principal writes, "At your request I am giving below the record of L— E— for the three terms that he has been in the — High School.

Ist term Jan.-June, 1912	2d term Sept. '12-Jan. '13	3d term Jan.-June, '13
English 1A..... 61	English 1B..... 56	English 1B..... 60
German 1A..... 20	German 1A..... 60	German..... 52
Math. 1A..... 37	Math. 1A..... 51	Math. 1A..... 75
Biology 1A..... 67	Biology 1B..... 67	Phys. Geog..... 83
Drawing 1A..... 30	Drawing 1A..... 50	Drawing 1A..... 55
Music 1A..... 10	Elocution..... 60	Music..... 40
Elocution..... 25		Phys. Tr..... 60
Phys. Tr..... 0		

He has credit for 37 points and is now in the 2A class."

Relating the items on the medical record as given and those in the letter above, we have an explanation of some of the low marks. Those subjects like elocution, music, and English, involving articulation and speech, are poor because "the boy wears an upper set of false teeth—the plate fitting imperfectly and causing a peculiar indistinctness of speech." What is the relation between the observations on the medical record,—"One brother in the far west on account of ill health," "Is introspective and apprehensive about his health"—and the first term's mark in physical training? At the time of this medical examination by the school authorities the teacher of physical training in the — high school was acquainted with the boy's physical condition and his desire to succeed in athletics as well as the fear and apprehension he felt about his health. The physical training mark for the third term suggests that the teacher was able to accomplish much. It is of interest to know that this boy wants to be a scientific farmer. He is said to have an unusual knowledge of soils on Long Island.

CONCLUSION.

The question presented in this section of the report seems to be,—Can we say as the result of the examination of 268 children, 148 of whom were known to be backward, that therefore 15,000 children out of 750,000, or the total school population, are feeble minded?

TABLE I. STATISTICAL SUMMARY.

CHILDREN EXAMINED BY THE HANUS SCHOOL INQUIRY COMMISSION.				
Percentage of Total Register	Number	School Classification	Found Defective	Conclusion as to 750,000 public school children in New York City
1 ¹ / ₁₀₀ of 1%....	81	Grade E.....	75%	
1 ¹ / ₁₀₀ of 1%....	115	Regular Grade...	30%	
1 ¹ / ₁₀₀ of 1%....	5	High School.....	100%	
1 ¹ / ₁₀₀ %	22	Grade D.....	100%	
100%.....	2000	Vineland, N. J....	2%	Therefore 2% are feeble-minded.

DISCUSSION (DISTRIBUTION).

The validity of the statement that 2 per cent of New York City public school children are feeble-minded must be established by showing such a distribution of children examined throughout the city, and within the school grades, as will permit fair and adequate "samplings" of the whole school population.

Mention is made in the report of *two* elementary schools in which D class children were examined and of *five* elementary schools in which regular grade children were examined. These are the only indications of the number of elementary schools visited for the purpose of testing children. No mention is made as to the boroughs in which these seven schools are located.

TABLE II.

Number of Elementary Schools June 30, 1912	Number of Elementary Schools Visited by School Inquiry Com.
Manhattan.....	160
The Bronx.....	48
Brooklyn.....	168
Queens.....	86
Richmond.....	34
<hr/> Total.....	<hr/> Total.... 7

Children from one high school were tested. There were twenty such schools while the School Inquiry was under way, and on June

30, 1912, there were twenty-one, distributed as follows,—Manhattan, 5; the Bronx, 1; Brooklyn, 8; Queens, 6; Richmond, 1.

The report continues,—“Moreover, these schools were located in the upper west side, lower east side, Flushing, and Borough of Brooklyn, so that they are fairly representative of the city” (page 13). By “upper west side” does the report mean Washington Heights or that crowded section of colored and white people from Sixtieth to Seventieth Streets? Does the “lower east side” mean the thrifty, energetic German element in the neighborhood of Ninth Street or the more recent arrivals in America in the district south of Grand Street? The Borough of Brooklyn is a large place. Were the children examined from the Heights section, Erie Basin, Ridgewood, Brownsville, Williamsburg, or Park Slope? Similar inquiries could be made about Flushing and other sections of Queens Borough. It will be noticed that no examination was made in the Bronx with its school population of 79,452, or Richmond with its 14,415 of public school children. With these great sections of the school population left out, and with lack of definiteness as to localities which were examined, it is obvious that the distribution of children tested throughout the city was not such as would permit of fair and adequate notions of the whole school population to be obtained. The validity of the statement that 2 per cent of New York City public school children are feeble-minded appears not to have been established by a study of the distribution throughout the city.

How were the children distributed within the school grades? One hundred and forty-nine children were from the ungraded classes, the special E classes, and the special D classes, while only one hundred and fifteen were from the regular grades and five from high schools. We do not know the particular grades from which the one hundred and fifteen children were taken. It would throw light on the question to know whether they were little 1A children or big 8B children. From the material in the report, and which is quoted above, it is questionable whether the “samplings” were sufficiently distributed throughout the city and within the grades to permit of a fair and adequate notion of the number of feeble-minded in the school population of this city.

DISCUSSION (METHOD).

The validity of the statement that 2 per cent of the New York City school population are feeble-minded must next be established by showing that the method of giving the test and tabulating results is in accordance with the best scientific practice.

Scientific practice demands answers to the following:—How

were these tests given? What method of checking up the results was worked out? What information does the report give about the children tested? Were those tested the children of professional people, artisans, skilled laborers, office employes? What nationality were these children? Were they foreign or native born? Is English a foreign language in their homes? How old are they? What school grades are they in? Were the tests given to individuals or to groups? What time was allowed for the testing of each child? There is not a word in the report in answer to these questions. There is not a tabulation of the tests in the whole report. There is no evidence that the checking up of results was in accordance with the practice in scientific work.

However, for the sake of the argument it may be said that it is quite likely that *this* or any other test given to school children under the conditions named would show a similar result. Because of their immaturity we can never be certain that any test given to children really shows the true condition of those tested. Every parent knows that otherwise well-behaved children often fail to do their best in company. Every teacher will testify that the superintendent never sees the children's best work. Indeed the investigator himself acknowledges "No one has yet discovered any sure way of selecting the right person by means of a fixed examination" (page 8). In testing children we must discount the new conditions created by the tests; the strange person who is giving the test, the attitude of the children toward being tested, the fact that children are just developing their power of control and direction. A test must be checked up by what is known of the child under other conditions. This is the tendency in school promotion—not what a child does in examinations alone but what he does throughout the term, determines his ability to grasp harder work. It is a fact that more children than adults are killed by accident on the street, notwithstanding the fact that children are more agile in getting around; but adults have better control and do not lose their heads in new and untried situations. There is no evidence that the chance reactions of the children under the artificial conditions of the examination, given by persons unfamiliar with the child, were in any way taken into account.

It is obvious that with no information given as to the type of children tested, their ages and their nationalities, no tabulation as to the time given to each examination, and the method of checking up the results, the statement of the School Inquiry Committee that 2 per cent of New York City public school children are feeble-minded has not been proved.

DISCUSSION (TESTS).

In the next place, the validity of the statement that 2 per cent of the New York City school population is feeble-minded must be established by demonstrating the general acceptance by scientific people of the particular test used in determining such percentage. The Binet-Simon Measuring Scale of Intelligence is the test that was used. This test was worked out after experimental work on two hundred school children of Paris, France. The characteristic of the scale is, that it is supposed to indicate certain knowledge which normal children of a given age are said to have and which children younger will not have unless they are precocious. Its most extended use in this country was by the School Inquiry investigator who examined two thousand school children, which is the entire school population of Vineland, New Jersey. The following are the Binet-Simon Tests of Intelligence for the eighth and for the twelfth year:

	VIII		
		Wood Glass	Paper Cloth
1	Compares (Time 20") Butterfly Fly		
2	Counts backward 20 - 1. (Time 20")		
3	Repeats days. M. T. W. T. F. S. S. (Time 10")		
4	Counts stamps. 111222. (Time 10")		
5	Repeats 4 7 3 9 5.		

	XII		
1	Repeats 2 9 6 4 3 7 5. 9 2 8 5 1 6 4. 1 3 9 5 8 4 7. (1 out of 3 correct).		
2	Defines Charity Justice Goodness		
3	Repeats, "I saw in the street a pretty little dog. He had curly brown hair, short legs and a long tail."		
4	Resists suggestion (Lines). 1. 2. 3. 4. 5. 6.		
5	Problems: (a) Hanging from limb. (b) Neighbor's visitors.		

Since the report states that some of the children tested live on the lower east side, it is well to consider the fairness and the reasonableness of the first question in the eight year old test. The following story told by an elementary school teacher will suggest the possibility of a correct answer to this test from these children. The teacher was passing a Grand Street florist's shop late in the afternoon. Grasses and similar refuse were being swept out when a group of children rushed up and asked to have the sweepings.

They took handfuls and one said, "We'll throw it down and walk on it and it will be the country." Perhaps children, whose conception of the country this represents, would be able to compare a fly and a butterfly! How many adults who after hearing it read once can repeat, "I saw in the street a pretty little dog. He had curly, brown hair, short legs and a long tail," which is a part of the twelve-year-old test?

The comments of scientific men show that the test is not unqualifiedly accepted. Since 1908 there has been considerable discussion in scientific journals with regard to the workings of the Binet-Simon Scale. This discussion has centered around the marking scheme, native ability *vs.* scholastic attainments, lack of consideration of emotion, habit, control, etc. Some of the more important criticisms are as follows:

"In well-to-do quarters the children averaged a higher level (at least three-quarters of a year) than those of the poorer infant and primary school. This shows that one must reckon with variations of intelligence in different social classes."

M. Decroly, Brussels, Belgium.

"The tests are largely those of language efficiency; the ability to repeat words and numbers is given too much importance, native ability is not sufficiently tested but rather scholastic and other attainments."

Leonard P. Ayres, Ph.D., Russell Sage Foundation.

"Retardation does not follow a common flat level any more than growth does, a child can be at the mental age of six in one capacity and twelve in another."

C. E. Seashore, Ph.D., University of Iowa.

"I am quite certain that many diagnoses of teachers or nurses based purely upon the Binet tests will be very misleading, often humorously absurd, and at times pernicious. I base this judgment upon extensive use of the tests on various types of children: normal, backward, feeble-minded, epileptic, insane, precocious. The diagnoses which I make after an exhaustive study of all the available facts are quite at variance with the Binet rating in a considerable percentage of cases. * * * It should be remembered that mental testing is only one phase of mental diagnosis; the determination of mental status does not automatically include the determination of the causative factors. 'The function of the Binet-Simon, or any other graded scale of intelligence, is to give us a *preliminary*, and not a *final* survey or rating of the individual.' The testing is 'merely a point of departure for further diagnosis'."

J. E. Wallace Wallin, Ph.D., University of Pittsburgh.

"Theoretically the Binet test is of equal value in classifying cases of mental defect, but I have had twenty-five years of experience in the diagnosis and treatment of mental defect, and I have taught and classified thousands of these people, and it is not necessary for me or for my assistants to use a Binet test for classification. Nor do I believe that the Binet test would properly classify

pupils for definite instruction or for detailed care. I do not believe that any merely psychological measurements will take the place of practical medical training and experience in the diagnosis and care of the feeble-minded."

Walter E. Fernald, M.D.

"I do not consider the Binet tests infallible by any means, in determining the mental grade of a child. * * * In examining the child I take many things into consideration, and am always careful to get the family history and note the stigmata of degeneration."

Martin W. Barr, M.D.

"No Binet-Simon tests, nor any other tests, will inform us as to what children we shall consider feeble-minded. We define the feeble-minded child as a result of social considerations. He is the child who for his own good and for the good of society should be segregated for life. After we have arrived at the social definition of feeble-mindedness, we may employ our tests to inform us as to the mental status of a suspected case. A casual glance is all that is needed to assure us of the mental and physical status of some feeble-minded children. But there will always be large numbers of children in the border zone between the socially normal child and the socially feeble-minded child, and with such children the refinement of clinical methods and the application of intensive methods of observation and training will furnish us with psychological data which will enable us to arrive at a secure social classification. A strictly scientific nomenclature will dispense with the term 'mentally defective,' as failing to characterize with sufficient definiteness the class of children under consideration. What characterizes 'mentally defective' children is not that they are mentally defective, for other children, in fact all children, are mentally defective, but that they are so defective mentally as to be socially unfit. For the term 'mentally defective,' I would therefore propose substituting the term 'socially unfit,' or 'socially defective.'"

Lightner Witmer, Ph.D., University of Pennsylvania.

The statement is made that "no one claims for it (Binet test) that the results obtained should take precedence over all other evidence in the case of an individual child" (page 12). There is no evidence in the report that facts (other than those deduced by the use of the Binet tests) were considered when the estimate was made. The validity of the estimate therefore is determined by the general acceptance of the test at this time.

It is evident from the quotations that there is a body of earnest students in this country and in Europe who are at work on the subject of mental tests; and that at present there is no universal belief in the Binet tests as the means *par excellence* of diagnosing deviating or exceptional mentality. In view of this fact the validity of the statement that 2 per cent of the New York City school population is feeble-minded has not been established.

DISCUSSION (COMPARISON).

The last standard which will be applied in order to determine the validity of the estimate of the School Inquiry Committee that 2 per cent of the school population of this city is feeble-minded is that of comparison with the results of similar studies made elsewhere. A study of available data shows the following:

For Vineland, New Jersey.

"The most extensive study ever made of the children of an entire public school system of two thousand has shown that 2 per cent of such children are so mentally defective as to preclude any possibility of their ever being made normal and able to take care of themselves as adults. (See *Pedagogical Seminary* for June, 1911. 'Two Thousand Children Tested by the Binet Scale'; by Henry H. Goddard.)" (Page 11, School Inquiry Report.)

For Massachusetts.

"The exact number of the feeble-minded in the community is not known. There are probably 2 to 1000 of our population, over 7000 in this State alone."¹

For Pennsylvania.

"An estimate of the number of feeble-minded at large in the community was based upon the proportion of one mental defective to every three hundred and fifty (350) persons, or one in four hundred (400) as a conservative estimate, and one epileptic in two thousand (2000) persons, the report stating that this 'means more than 18,000 in the State of Pennsylvania'."²

For Germany.

"An average of $\frac{1}{2}$ of 1 per cent of the population of the city is made up of weak-minded children."³

For England.

"The most comprehensive investigation of the problem, the care and treatment of the feeble-minded, was made by the English Royal Commission which was appointed by Parliament in 1904. This Commission during six years studied in many countries the problem here considered. The following table shows the result of their investigation:

¹ The Burden of Feeble-mindedness, Walter E. Fernald, M.D.

² Report of the Pennsylvania Commission on Segregation, Care, and Treatment of Feeble-minded Persons, 1913.

³ B. Maennel, Rector of Mittelschule in Halle a.d. Saale.

Showing the Number of Feeble-minded per 1000 Throughout the United Kingdom—English Royal Commission, 1904

Urban	Manchester	3.74
	Birmingham	3.76
	Hull	1.35
	Glasgow	1.68
	Dublin	4.14
	Belfast	2.45
Agricultural	Somersetshire	4.54
	Wiltshire	4.25
	Lincolnshire	4.68
	Carnarvonshire	3.96
	Galway	4.49

SUMMARY

Place	Feeble-minded
Vineland, N. J.	20 per 1000
Massachusetts	2 " 1000
Pennsylvania	3-4 " 1000
Germany	5 " 1000
England	3-4 " 1000

Showing the Percentage of Mentally Defective Children to the Public Elementary School Population in Certain Districts Investigated by the Royal Commission of 1904.

Urban	Manchester	1.20
	Birmingham	1.03
	Hull	0.30
	Glasgow	0.74
	Dublin	1.85
	Belfast	0.50
Industrial	Stoke-on-Trent	0.59
	Durham	0.24
	Cork	0.35
Mixed Industrial and Agricultural	Nottinghamshire	0.66
	Carmarthenshire	0.76
Agricultural	Somersetshire	0.61
	Wiltshire	0.55
	Lincolnshire	0.96
	Carnarvonshire	0.47
	Galway	1.33

"The only escape from this conclusion (2 per cent) would be the assumption that in New York City there is a better condition of things than exists in the small city and rural population in southern New Jersey" (page 12).

The English Royal Commission found that the urban population of six cities gave an average of 2.85 per thousand, while five agricultural districts gave a proportion of 4.38 per thousand of the general population. The Commission on the Care and Treatment of the Feeble-minded in Pennsylvania comments on this statement as follows: "It is possible that an explanation of this sociological phenomenon may be found in the lure of the city, which is felt more by the capable, ambitious, and enterprising than it is by the dull and plodding in rural population. On the other hand, the incompetents also may be driven from the city, where they are in danger of starvation and go to the country, where living is cheaper or charity more open-handed."

From the foregoing it is evident that the estimate of the School Inquiry Committee that 2 per cent of the New York City school population are feeble-minded is not reinforced by the results of the investigations made elsewhere. It is further evident that the English Royal Commission found a greater percentage of feeble-minded in rural communities than in urban centers.

(To be continued.)

THE EXCEPTIONAL CHILD IN SCHOOL.

By A. W. TRETTIEN, PH.D.,

University of Kansas.

In March, 1913, the parents of a nine year old lad brought him to the office of the University of Kansas for physical and psychological examination. To all external appearances the boy was normal. He was of average size, and was well built; his senses appeared to be normal; his motor control was good and he possessed a good stock of common sense. Yet he had made very little progress in school work. He knew some of his letters, and a small number of words that he spelled out laboriously. He took little interest in school work in general, and as a consequence he was inattentive, mischievous, and occasionally "ugly" toward the teacher and his parents. At times he would sit for an hour in a passive or dreaming attitude, paying no attention to what was going on about him.

He was fond of playing out of doors, riding a pony, and taking hikes with the boy scouts. Here he showed considerable initiative and intelligence. He was not reliable in attending to simple duties about the home. On the contrary he was lazy, forgetful, inattentive, untruthful and he did not hesitate to protect himself by the most exaggerated falsehoods. This was the report of the parents, who are intelligent and thrifty people. They had lived upon a farm where the boy had spent most of his life. The father confessed that he was not apt at figures and did not enjoy study.

A careful physical examination of the boy revealed no physical defects nor abnormalities. He ate sparingly; his general metabolism appeared rather slow. The mental tests, using the Binet scale, placed the lad at seven years. His perceptions within the narrow and immediate circle of his interests were accurate but rather sluggish. His power of attention was limited, and it required a distinct and strong stimulus to awaken him to action. His imagery when confined to his interests was accurate. He was very slow to perceive word forms and to remember them. He spelled out his words when trying to read, but understood little that he himself read, although he enjoyed being read to.

Learning to spell words appeared to be entirely beyond his powers of accomplishment. This in brief was the lad's condition when he was presented in the spring of 1913. His disposition was growing worse, due to uncontrolled habits and new undirected impulses.

What was this boy's trouble? In infancy the lad had suffered from an attack of high fever which without doubt had affected his neural reactions. He became less active and as a consequence he became an over-indulged and wilful child at home. Instead of being stimulated to action he was allowed to form the habit of passing off into somnambulistic states for half an hour at a time. When he became old enough, he was sent to a rural school where he learned some of his letters which had no meaning for him and also to spell out a few words by the letter method. When he was not awake and in mischief, he was day-dreaming and accomplishing nothing. At home his mother read and told him stories from which he learned and remembered many facts.

Beginning in October, 1913, the boy was given a special course of instruction for one half hour daily, in addition to continuing his attendance in the city schools. At first he would forget to keep his appointments, or to bring his book. He would forget his assignment and remember little of what he had been taught on the previous day. After carefully diagnosing the case the following line of training was undertaken with the results stated.

Before beginning his study he was put through a rapid and vigorous calisthenic drill; this improved his circulation and caused him to concentrate his attention to receive and to execute commands. The second step consisted in reading to him a simple story to get the thought. He was then given a thorough training in learning to read, beginning with concentration of attention, then passing to the sentence, the word, and finally the spelling methods. He made for himself a dictionary containing the words that he had learned to spell. In every case in reading or spelling he was kept mentally alert in order to make him work with concentrated and maximum attention and, if possible, with interest, stopping before fatigue set in. In every case an effort was made to prevent mental confusion. At the close of the lesson a definite command for the next day's assignment was given, to come at a certain hour, to bring the required book or other material, and in only one instance did he fail to remember the suggestion given. There were times when other interests with his companions might have caused him to forget—but at the appointed hour, rain or shine, he appeared for his lesson. With what results? After five months the boy can read understandingly in the third reader and is doing passing third grade work.

One day he appeared and was given the following sentence to be written from dictation: "I would go down town if I could." He had previously learned to spell every word used. After listening to the dictation he wrote, "I wod go don ton if I cod." He had

relapsed into the old habit of inactivity. He was taken from his desk and put through the course of rapid and vigorous physical exercise, and then given the command to spell all the words correctly. After that the original sentence was dictated and he wrote—"I would go down town if I could." He has written very creditable letters at home and has brought them to his lesson.

The method of procedure with this lad is simple indeed:

1. Physical exercise sufficient to stimulate a normal circulation, that will admit of
2. A maximum power of attention to the matter at hand, and a review with interest and profit of the impressions that have been clearly made.
3. Applying the material that has been mastered to his life interests as in the case of making the dictionary and the letter writing, the reading of the scout rules, etc.
4. Giving the first stimulus with such accuracy and clearness that the impression may become permanent in his experience.
5. By suggestion inspiring the response to action which breaks the old habits and forms new modes of reaction.
6. Arousing by personality his confidence and a desire for the work to be accomplished.

The boy had become the victim of a system which gives a teacher thirty pupils, without the resources to meet individual needs. No doubt she was doing her best, but he was losing out before he had even begun to master the conventional tools of modern society. With the growth of the lad's knowledge and the development of his mind, he is now mastering his impulses and is beginning to be a more congenial companion.

Every community in the land has a group of children who may be represented by this boy. Backward in school, with fair ability but anti-social in many of their instincts, they are growing up to form a large class of dangerous members of society. As consulting psychologist of the Boys' Industrial School of Topeka for the last three years, I found that 86 per cent of the boys examined were from one to seven years retarded in their mentality, due to various causes,—disease, malnutrition, unhygienic social and home conditions, or early home and school neglect. It is variously estimated that about 5 per cent of the children in the average community are of this type of arrested development. These grow to maturity and fill the ranks of paupers, tramps and criminals. The schools are doing very little for them.

In the state of Kansas the appropriations called for by the institutions of charity and correction and the hospitals for the infirm

in 1912-14 amounted to nearly four million dollars as compared with three millions for the support of the higher educational institutions in the same period. In the light of this illustration, two steps are necessary to increase the efficiency of our public school system:

Every community needs the services of a trained psychologist for at least part time, to make examinations and tests of the exceptional child, and to advise with parents and teachers regarding the best methods of training.

Within every graded school system there should be an ungraded class taught by specially trained teachers, to which this group of exceptional children may be sent. Every child should here receive the training which will meet his individual needs. With what results? Many of these unfortunate children may be saved to the commonwealth, and they will become an asset to the state instead of a liability; citizens instead of wards.

REVIEWS AND CRITICISM.

The Normal Child and Primary Education. By Arnold L. Gesell and Beatrice Chandler Gesell. Boston: Ginn and Company, 1913. Pp. x+342. Illustrated.

"What is a normal child?" ask Dr. and Mrs. Gesell in their preface. "The prevailing standards consciously or unconsciously adopted in answer to this question are sadly slippish. It is carelessly assumed," they observe, "that the normal child is the average child. The sciences of education have not, however, worked out a detailed psychophysical portrait of the normal child, and at present we have more adequate pictures of types of subnormality than we have of normality. There are over seventeen millions of pupils, the majority under ten years of age, enrolled in the public schools of our country. A small fraction is in special classes for the backward and defective."

So far there is no exception to be taken to what these authors have told us, but when they add, "The rest are all normal," we can only retort that we heartily wish they were. The normal child is not to be defined by so hasty a method of separation. Besides the small fraction of the school population in classes for the backward and defective, there is a much larger fraction still encumbering the grades of many town and city schools, either because there are no organized classes for the backward to which these children may be sent, or because the school system lacks the services of a clinical psychologist to sort out the backward and defective from the normal.

If the authors have failed to offer an adequate definition of the normal child, they have succeeded better in presenting "a psychophysical portrait" of him. They have depicted him as passing through the various processes of primary education and as responding to stimuli in ways recognized as normal. From all this one may construct workable standards of normality for children, while awaiting an exact definition from other sources.

Dr. and Mrs. Gesell remark that they have not "written for the technical clinician, but for the elementary school teacher, and of course for other traditional guardians of children, as mothers, aunts, some fathers, supervisors, and child-study and reading circles." This being the case, they have done well in adding a selected reading list covering seven pages and containing references to yet fuller bibliographies.

Part one of "The Normal Child and Primary Education" is concerned with an historical introduction; part two, the genetic background; part three, the pedagogy of the primary school; and part four, the conservation of child life, starting with Pestalozzi and coming down to Jane Addams as the present day protectress of the rights of youth. The first three parts are able compilations of data from numerous and widely scattered sources. Part three in particular contains much valuable material of practical use to teachers and parents. An appendix on the Montessori kindergarten discusses this latest development in the education of little children, and ends with a warning which cannot be too often repeated,—"But the fulfilment of this principle in our country needs skilful personalities more than it needs didactic apparatus. Apparatus without trained personality in 'the directress' will be insidiously dangerous."

A. T.

How I Kept My Baby Well. By Anna G. Noyes. (Educational Psychology Monographs, No. 9.) Baltimore: Warwick and York, 1913. Pp. 193. Illustrated.

Mrs. Noyes, who holds the degree of bachelor of science, dedicates her book to Professor John Dewey, "whose plea for the extension of the methods of science to the commonplace things of life gave me courage to believe that a mother's own baby might be a fit subject for scientific investigation by even a baby's own mother." She confesses that to begin with, in spite of her college training, she was "a novice at baby culture," but adds in extenuation of her shortcomings, that if she were "going in for chickens, or pigs, there would be schools, universities, and government pamphlets galore at her service, but when she would raise only a human baby, universities and government bureaus are silent." Her next remark, by the way, throws a light upon the sort of preparation for life as a citizen and member of the race, which colleges today are offering,—"I can not recall any particular instruction given me during my academic life that so much as intimated that the problem of baby raising existed in the world. But I had learned, although late in my college career, that there was such a thing as inductive thinking." Mrs. Noyes is fortunately able to say, "and armed with the latter power, I was prepared to attack the former problem."

What she tried to do, and did with notable success, was simply, "to keep the baby well, so that he could not get sick. . . . This I should call the common sense way of caring for a baby, and it is the way, of course, in which many mothers have already brought up their babies. But I can not find that any one of them has stated the problem consciously, or at least stated it for publication, or has any data to offer in the shape of records, as to how the plan worked even in one case. And this is all I claim to have done. I have a complete record of one baby who was kept well for two years by not being allowed to get sick."

The record is indeed complete in the utmost fullness of scientific detail. More than forty charts are presented showing the daily record as to time of nursing, intervals between nursings, sleep, regurgitation, vomiting, feces, condition of skin, behavior, crying, and amount of water swallowed. Later on when other foods were given in addition to the nursing, and later still when the baby was fully weaned, the charts record just what he ate and how he thrived on it. The author's comments and summaries of the data are thoroughly interesting and illuminating.

The book is illustrated with about sixty photographs of the baby at different stages of growth. It is a pity that they are so poorly reproduced in printing that much of their charm is lost in a greyish fog. Some of the pictures show the boy with his mother, and one even with his father, although usually it was the father who managed the camera; but in most of them the youngster appears alone, climbing, walking, playing, laughing, eating—doing nearly everything that a jolly, active baby can do when in perfect health.

Mrs. Noyes makes a suggestion which if carried out will work wonders for the children of the immediate future. "The next thing to do," she urges, "is to follow this record with the records of, say, fifty babies." What it would

mean to thousands of intelligent but uninstructed mothers to have such records available for their guidance, can hardly be imagined. For babies differ normally within very wide limits as this mother and many others have discovered after days and months of needless anxiety. Just what variations may be normal, and what are abnormal or undesirable, still await the research of the psychologist of babyhood, and he in his turn is waiting for records, like this one by Mrs. Noyes, which can be compiled only by the mother who has the skill to observe, the patience to record, and the courage to leave false sentiment and irrelevant moralizing out of what she has to tell us.

NEWS AND COMMENT.

A New Research Fellowship at Stanford University.

Through the co-operation of the estate of the late Dr. C. Annette Buckel, of Oakland, a research fellowship for the study of feeble-minded children has been established at Stanford University. The department of education, under the direction of its head, Professor E. P. Cubberly, will have the appointment of the fellow, who will work in co-operation with Professor Lewis M. Terman. The first appointment will be for the academic year 1914-15. This is the first foundation for this sort of work in any California university.

Dr. Buckel was an Oakland physician and was widely known for her charitable work in Oakland and for her interest in feeble-minded, backward and delinquent children. On her death her estate was left in trust to Miss Charlotte S. Playter, of Piedmont, and the money was to be used to advance the condition of backward and feeble-minded children. Miss Playter has turned the money over to Stanford University. The income amounts to about \$500 a year, and the board of trustees of the university have added an additional \$500 to the fellowship. It is hoped to increase this sum so as to make possible a thorough and constructive study of the whole problem of mental deficiency.

Clinical Psychology at University of Pittsburgh Summer School.

The School of Education of the University of Pittsburgh this summer offers superior opportunities to teachers, psychologists, nurses, and physicians for the study of feeble-minded, backward and other types of mentally deviating children. The courses will begin June 29 and continue to August 22. Classes for exceptional children will be started July 6, and continue for five weeks in charge of three special teachers. The teaching of music, domestic science, and gardening will receive supervisory attention from regular specialists on the School of Education faculty. The work includes the academic branches, gardening, wood, raffia, clay and reed work, pottery, cooking, sewing, sensori-motor exercises, games, plays, calisthenics, and music. The children selected will represent a greater range of cases than can be found in colonies or institutions, and will grade nearer the type of cases which, in future, will be found in the special classes of the public schools. Under the immediate supervision of Dr. J. E. Wallace Wallin, students may take the special class work, together with the following courses:

clinical psychology and the study and care of feeble-minded and backward children; psycho-educational pathology and educational therapy; the psychological clinic; social investigation; research and research work for the feeble-minded and backward. One of the local medical experts, Dr. A. Fetterman, will assist in the clinical course.

Summer Courses in Systematic and Applied Psychology at University of Pennsylvania

The University of Pennsylvania has announced training courses in mental, educational, and social psychology for expert social workers, educational experts, and clinical psychologists. During the period July 6 to August 14, 1914, the following courses will be given:

Practical Courses.

- 5 S. ABNORMAL PSYCHOLOGY.—Dr. S. D. [redacted]
- 11 S. CHILD PSYCHOLOGY A, INFANCY [redacted] —
First three weeks.—Assistant Prof. [redacted]
- 12 S. CHILD PSYCHOLOGY B, ADOLESCENCE [redacted] —
three weeks.—Assistant Prof. [redacted]
- 30 S. THE PSYCHOLOGICAL CLIENT [redacted] —
the mental characteristics of [redacted]
Maxfield.
- 31 S. THE PSYCHOLOGICAL THERAPIST [redacted]
- 32 S. ORTHOGENIC METHODS [redacted] —
with the restoration of [redacted]
class, including [redacted]
corrective and dynamic methods
and Assistant Prof. [redacted]
- 33 S. Orthogenetic Methods [redacted]
Twelve weeks.
- 35 S. [redacted]
- 36 S. [redacted]

any
that
given

the state-

the children,
lasses in the
ed for these
now in these
area; there,
pervised and

- 3 S a. GENETIC PSYCHOLOGY. Lectures. Half Course. First three weeks.—Dr. S. W. Fernberger.
- 4 S a. BEHAVIOR. Lectures. Half Course. Second three weeks.—Dr. Fernberger.
- 3 S b. GENETIC PSYCHOLOGY. Laboratory. Half Course. First three weeks.—Dr. Fernberger.
- 4 S b. BEHAVIOR. Laboratory. Half Course. Second three weeks.—Dr. Fernberger.

Advanced Courses.

- 61 S. QUALITATIVE ANALYSIS A. First three weeks.—Assistant Prof. Twitmyer and Dr. Reed.
- 62 S. QUALITATIVE ANALYSIS B. Second three weeks.—Assistant Prof. Twitmyer and Dr. Reed.
- 67 S. CLINICAL METHODS.—Dr. Maxfield.
- 99 S. INDIVIDUAL LABORATORY.—Assistant Prof. Twitmyer.

In addition to the regular staff of the Psychological Laboratory and Clinic, the following clinical and special class teachers will conduct observation classes and give demonstrations:—

Mary E. Marvin, Principal Mary E. Marvin Home, Secane, Pa.; Betty B. Spencer, teacher in Milwaukee School for Deaf Children; Kathryn Crain, teacher in speech class of Psychological Clinic; Oscar E. Gerney, Assistant Instructor in Gymnastics, Department of Physical Education; Emily Slugg, teacher Special Class, Harriet Beecher Stowe School, Philadelphia; Belle Thomson, Kindergartner, Public School No. 10, Manhattan, New York City.

An illustrated circular describing these courses may be had by addressing a postcard to the Laboratory of Psychology, University of Pennsylvania, Philadelphia, Pa.

The Psychological Clinic

Copyright, 1914, by Lightner Witmer, Editor.

VOL. VIII, No. 3.

MAY 15, 1914

A STUDY OF THE SCHOOL INQUIRY REPORT ON UNGRADED CLASSES.

BY ELIZABETH E. FARRELL,

Inspector of Ungraded Classes, New York City, N. Y.

(Continued.)

ORGANIZATION.

The following quotations from the School Inquiry Report relate to the type of organization to be recommended for special classes:

"Separate schools would thus be established for these children. * * * In such schools grading would be possible. The lowest grade cases, for whom little can be done, could be put in one group, and the teacher in charge would only be required to keep them happy, train them in simple habits, and do for them what their condition allows. Those who are a little higher could be put together in another class, which might well be a class of border-line cases. Of these, some might get back into the grades." (Pages 18, 19.)

"Ultimately these schools should develop into home schools, keeping the children as many hours as possible, and many of them even over night. And, finally, they should develop into city institutions for defectives, thus largely solving the problem." (Page 19.)

"By the establishment as fast as possible of special schools to take as many as possible of these ungraded classes out of the regular schools, to the end that the children may be more adequately directed, supervised, graded, and given appropriate manual training and vocational work." (Page 22.)

According to the report the facts upon which the above statements are based are as follows:—

"Again teachers and principals feel almost universally that these children, although cared for by the school system, should not be in separate classes in the regular schools; but that centers or schools should be established for these children, so located that they could take all of the children who are now in these ungraded classes, and those that ought to be in them, in a given area; there, brought together in one building, they could be cared for and supervised and directed as necessity required." (Page 10.)

DISCUSSION.

It seems well established here in New York City that we do need a special school center, but of a somewhat different type from that presented in the report. The character of such a special school center can be determined only by a consideration of the purposes and aims of ungraded classes. These are three: (a) normal children should not have their school time wasted and their work interfered with by the presence of children so stupid as to need a large part of the teacher's time; (b) the stupid children should not be subjected to the process of losing their self-respect because they are unable to do the work required of them; (c) the ungraded class is the means of educating public opinion with regard to a group of persons heretofore but little understood: it seems to be well indicated that the anti-social classes, the ne'er-do-wells, and many of the pauper class are recruited from generation to generation by those of feeble mentality who were, at some time, children in the public schools. If this latter aim is accepted it is only a matter of time when we will provide care instead of allowing the irresponsible to wander at large.

The special school center which New York City needs at this time, is a pre-vocational school center. For the high grade type of mental defective there is little hope of securing permanent custodial care. Reasons for this are obvious. To train them to be in some degree efficient and if possible self-supporting, requires years of application in some simple industry. Ungraded classes of pre-vocational type for the high grade mental defective have been in existence during the past two and a half years. Their activities and usefulness would be greatly augmented were they centered. The present vocational schools are designed for children who make considerable progress in the regular grade work. It is acknowledged that many children who would profit by such training in the vocational schools, are unable to get it because of the poor quality of their minds. A pre-vocational school would provide this opportunity.

Children for such a pre-vocational school, as far as they would be recruited from ungraded classes, would in no sense represent what is usually and popularly accepted as the feeble-minded type. These children (the feeble-minded type) the ungraded class should pass on to state institutions for permanent care. It is desirable that a working co-operation be established in accordance with the recommendation of the City Superintendent of Schools in his Annual Report for 1911. "I suggest, therefore, that your Board, * * *, enter

into an arrangement with the Trustees of the Syracuse institution, by which your representatives shall examine all children proposed for commitment from our city, to the ends that no children shall be committed who are not properly institutional cases, and that all pupils who are susceptible only of institutional treatment may be removed from the public schools."

Information as to the experience of other localities on the question follows:

PHILADELPHIA, PENNSYLVANIA.

February 27, 1913.

MY DEAR _____,

Replying for Dr. Brumbaugh to your inquiry of the 25th, I would say that our plan of having special classes in regular elementary schools has the advantage of providing accessible accommodation where it is most needed.

Very truly yours,

(Signed) OLIVER P. CORNMAN

Associate Superintendent of Schools.

From the *New York Tribune*, November 12, 1912.

"The work of the Detroit special rooms might be said to be three-fold; it acts as a clearing house to eliminate low grade children from the schools. It provides a place where middle grade, feeble-minded children may be given the advantage of some slight educational training. It provides a place where children who are merely backward for various reasons may be placed for a length of time varying from one year to two in order that special assistance may be given them to make up their grade work. * * * The present method, however, has its advantages in that there is less opposition to the segregation of feeble-minded children where all are classed as backward than there would be if these unfortunate children were placed in a room known to be maintained for the express purpose of caring for mentally defective children. For the same reason special rooms in Detroit have not been centralized, but one room is set aside in each of nine different buildings. These children, therefore, come into contact with normal children on their way to and from school and at recess time, which is no doubt of much benefit to them, and at the same time it makes the special rooms of much easier access to the children who are enrolled there."

"Mr. George Shann, M.A., F.R.S., City Councilman and Member of the School Committee, Birmingham, England, who visited ungraded classes in this city within the last few months, stated that in his city they were changing their organization of special work from the special school to the special class. He added, 'As a member of the School Committee a great deal of my time is taken seeing parents whose children have been ordered to attend the special school center. I try to convince them that the children will really have a better chance there. The result is, however, that we get in the special center only those who are obviously defective, those about whom there is no question of a doubt, those who are in fact institutional cases. The high grade defective boy or girl, the border line case, who must live in the community and whose education would be more profitable if it were of a special character, does not get it because we realize that on the whole the chances are better if the pupil does not begin his industrial career from a special school center in which are low grade institutional cases.' "

The matter of the development of city institutions for defectives under the Board of Education involves questions of law and precedent. The city already maintains an institution for dependent defectives on Randall's Island. The State of New York has already acknowledged its duty to the defective. It stands willing to discharge it if public opinion is strong enough to warrant the obligations, financial and other, involved in any adequate scheme for the care of the feeble-minded. To help to form this public opinion, while it provides for the needs of the children, is a legitimate function of the ungraded class.

The question of the type of organization was discussed in the report of the City Superintendent of Schools for 1912. This discussion is attached as Appendix A.

CHILD LABOR.

With regard to child labor the School Inquiry Report makes the following recommendation:

"The child labor law should be so modified as not to apply in its present form to children who have been declared mentally defective. These children should be allowed to go to work as soon as those in charge of the schools or classes conclude that it is more profitable for these children to be under the direction of their parents or in regular work than in the schools. However, this should apply to such cases only as cannot be placed in an institution or colony." (Page 23.)

DISCUSSION.

The attitude of the National Child Labor Committee toward the above recommendation has been put into words by the Secretary, Mr. Owen R. Lovejoy, as follows:

"The National Child Labor Committee believes that it would be a serious blunder to adopt the Tenth Recommendation in Dr. Goddard's Report, and that this recommendation is out of harmony with the report itself. He urges here that the Child Labor Law in its present form should not be made to apply to mentally defective children, but that such children 'should be allowed to go to work as soon as those in charge of the schools or classes conclude that it is more profitable for these children to be under the direction of their parents or in regular work than in the schools.'

"He has elsewhere urged the more complete equipment of the schools for training or caring for defectives, the better training of teachers for special classes, and makes an emphatic point of the fact that from 65 per cent to 90 per cent of our feeble-minded chil-

dren are due to 'morbid heredity.' He also states in his report that the great menace of this problem of feeble-mindedness is in having these children left unprotected in their unfavorable environment.

"Yet here he turns upon himself and urges that the only bar which at present even feebly protects the subnormal child shall be let down and he be exposed to the care of his feeble-minded parents or employed 'in regular work.'

"If it is proposed that the public, through the school system, shall take upon itself the problem of caring for these unfortunate ones, we see no objection to the development of such methods as will train them to self-supporting, or partially self-supporting, hand-work. But to amend the child labor law so as to have them the prey of private enterprise, to expose them to the rigors of our present industrial competition, where even now the efficient workman suffers in the labor market from the pressure of the ignorant, the inefficient, and the child laborer, would be a serious economic blunder.

"Who is to decide when the child is better off 'in regular work' than in school? The teacher who is already sorely vexed by the presence of the backward child? Suppose only the lowest cases, the most defective, were first weeded out of the schools. Who shall guard the border-line if this safeguard is removed? With the ignorant parent clamoring for the child's wages and the thrifty employer glad to 'give him work' for a pittance and the teacher glad to rid her class of him—it requires no great wisdom to foresee the sequel of such a suggestion.

"The principles of modern social welfare require protection for the helpless. It is not well to abandon the principle in case of the most helpless.

"A hundred years ago the churches in England piously sold their pauper children to the factories for money. Let us not today propose to sell our mental paupers to the factories for convenience."

TEACHERS OF UNGRADED CLASSES.

From the School Inquiry Report are taken the following extracts relating to the quality of teaching, selection of teachers, salary of teachers, and training of teachers.

"* * * the work is seldom satisfactory. * * * the teachers are inadequately trained. * * * have little understanding of manual work." (Page 7.)

"A few teachers are utterly incompetent, and some of these are substitutes." (Page 8.)

"The grade teachers of three years' experience are encouraged to take the special examination for teachers of these ungraded classes. * * * The difficulty here is the difficulty that we always meet when we encounter anything like a civil service examination or a fixed examination of people for these positions. No one has yet discovered any sure way of selecting the right person by means of a fixed examination. The result is that we have found certified teachers in these classes who are in no way fitted for the work. On the other hand, we have found people who are teaching as substitutes, having failed in their examination, who are nevertheless doing excellent work." (Page 8.)

"* * * many principals say that they could select teachers from their schools that could pass the examinations and would make ideal teachers for these classes; but that the teachers are unwilling to undertake the work, feeling that it is difficult and arduous, and has many drawbacks and that there is not sufficient compensation to induce them to make the change." (Page 11.)

"These teachers could also be paid an ample salary, enough at the start to induce them to take up this work, with an ample increase to those who prove effective, who show by their zeal, enthusiasm, and willingness to study the problem, that they are of the right kind." (Page 19.)

"The teacher of the ungraded class, who comes properly qualified, to receive a bonus of \$100 the first year, \$200 the second, \$300 the third, and so on, until it becomes \$500—this in addition to the regular salary of the grade teacher." (Page 19.)

"Suitable steps should be taken as rapidly as possible to provide training classes for teachers of defectives. In addition to the class work and theoretical instruction, teachers in training should have access to model schools. These could perhaps be secured at Letchworth Village, or other institutions for the feeble-minded. It is important that such model schools for the teachers in training should be institutional schools. Only in such schools do the teachers see that the children are distinctly feeble-minded. If they see only the children in the ungraded class or special schools, they tend more or less to retain the impression that the children are really normal, or will yet prove normal; and this impression (or conviction) is a serious handicap to their work." (Page 22.)

As stated in the report the facts upon which the above statements are based are as follows:—

"One hundred and twenty-five classes were visited." (Page 3.)

"At least two states (New Jersey and Michigan) are proposing a scale such as the following: The teacher of the ungraded class, who comes properly qualified, to receive a bonus of \$100 the first year, \$200 the second, \$300 the third, and so on, until it becomes \$500—this in addition to the regular salary of the grade teacher. To those unfamiliar with this work this may seem like a large bonus. Few people realize the special ability, skill, and training required. These teachers have to be specialists, and, therefore, experts. Again, few realize the nerve-racking work, the discouragements, difficulties, and even dangers these teachers have to face. An adequate salary is the least we can do for them." (Page 19.)

DISCUSSION (QUALITY OF TEACHING).

It is a matter of sincere regret that this report does not set up standards by which ungraded class teaching is to be measured. We

do not know whether the work was judged from the point of view of technique, of psychological or of logical sequence. Was the teaching judged by the content and purpose of the subject matter of instruction, or from its value in disciplinary training? Without such known standards the discussion must deal with what is only one individual's opinion of the quality of teaching in ungraded classes. It is permissible, therefore, to reproduce here the official record made by elementary school principals and district superintendents with regard to the quality of teaching in ungraded classes during the year of the School Inquiry. Twenty-six teachers had a rating of A - A from both the principal and the district superintendent; fourteen had A - A from the principal and B plus - B plus from the district superintendent; thirteen had B plus - B plus from both the principal and the district superintendent; thirty-two others received at least one A; twenty-eight others had some combination of B plus and B, while only one teacher was rated C - C by both the principal and the district superintendent. The question here is the value of the judgment of men and women whose business is the supervision and rating of teachers, as compared with the opinion of a research student in psychology.¹

DISCUSSION (SELECTION OF TEACHERS).

The selection of teachers by means of examination is a fruitful topic for discussion. Except in those parts of an examination which deal entirely with matters of fact, much is left to the judgment of the examiner. In examining candidates for license to teach in ungraded classes, the method of the examination requires that, in addition to being able to express in writing what one knows about backward children and the means of training them, the candidate shall demonstrate her ability to teach bench work, to tell a story, to give corrective gymnastics, and to give training for the simpler speech defects. All of this last stated work is given to children in the presence of the examiner.

The by-laws of the Board of Education permit a teacher holding License No. 1, who has three years' experience in teaching, to take up ungraded class work. No examination is required. This reassignment is made by the Board of Superintendents. In order that teachers so reassigned may be able to help the children, it has been expected that candidates shall have made, and be willing to continue, their study of ungraded class teaching. As a foundation

¹ Teachers are rated as meritorious and non-meritorious. Meritorious teachers are graded according to excellence as A, B plus, B.

for this graduate work there were in the teaching corps during the period of the School Inquiry, seven college graduates; one hundred and four normal college, normal school, or training school graduates; while ten had no professional training. Upon this as a foundation the following record of graduate study pursued by these same teachers was available at the time under discussion:

4	University of Pennsylvania
2	Harvard University
63	New York University
36	Vineland Training School
26	Adelphi College
51	College of the City of New York
42	Brooklyn Teachers Association

Total 224 records of advanced work by 114 teachers

While it is true that every teacher should embrace every opportunity to promote her professional knowledge and technical skill, it is a matter of congratulation that out of a present staff of one hundred and thirty one, one hundred and fourteen could make the above showing. In this connection it may be in place to say that all but three of the institutions named above gave the work indicated under the personal direction of the School Inquiry Investigator of Ungraded Classes.

DISCUSSION (SALARY OF TEACHERS).

There can be no question about the need for recognition of good ungraded class teaching. Like any other group of professional people, the ungraded class teachers want professional recognition quite as much as increased salary. A method combining these two points of view would be ideal. Exemption from examination for certain of the higher licenses, when satisfactory experience in ungraded class work with its consequent graduate study in such subjects as English phonetics and speech, corrective gymnastics, psychology, and mental tests, are offered as a basis of such exemption, would result in a source of supply of ungraded class teachers. Such an arrangement would offer to ambitious teachers an opening for future promotion. Since ungraded class work is admittedly more difficult, the advisability of recognizing a year's service as equivalent to two years in the regular grade, is worthy of consideration. Then too, making ungraded class teachers eligible for the higher grades in the elementary school would be the means of having

them placed in the B II salary schedule, while at the same time it would afford professional recognition.

DISCUSSION (TRAINING).

In 1906 when the Department of Ungraded Classes was organized the need for special training of teachers of defective children was recognized. An effort was made to have certain of the best institutions for the feeble-minded devise means of training teachers for service in the public schools. This was unavailing. In 1910, and again in 1911, the City Superintendent of Schools recommended in his annual report that a department for the training of teachers of mentally defective children be established in the Brooklyn Training School for Teachers. At the time of the School Inquiry the proposed course of study for such a department was under consideration by the Committee on Studies of the Board of Education. This course of study provides training in the theory and practice of teaching mental defectives. The institutions are used as laboratories. The problem presented by children who live twenty-four hours a day under control is quite different from that presented by public school children. On the whole it seems better to put before these teachers in training, conditions similar to those under which they must work.

EQUIPMENT.

The School Inquiry Report says of the equipment of ungraded classes:

"Some of them, indeed, have not any equipment." (Page 6.)

"Many children are not getting what they might get because of lack of equipment * * * in the classroom." (Page 23.)

As stated in the report these statements are based upon the following facts:

1. Conversation with principals and teachers while visiting one hundred and twenty-five ungraded classes.

2. A letter from an elementary school principal. (Page 7.)

"NEW YORK, March 20, 1912.

"MY DEAR DR. _____:

"In regard to the need of equipment in our ungraded class, about which you asked me, I find that:

"The class was established in November, 1910, and I supposed that the installing of an equipment would be automatic. When it did not come, allowing for the slowness of things in general, I wrote _____ that we needed it, and waited. I wrote also to _____ on Dec. 1, 1911, and to the Board of Super-

intendents on Feb. 12, 1912. To none of these letters have I ever received a direct reply, so that officially I do not know that they were ever received.

"I have written Miss Farrell at least four times on the matter, and have called her and the District Superintendent on the telephone several times. Last October I called on Miss Farrell at the office and mentioned the subject. Once she called me up and told me she had heard that there were three sets of apparatus on hand and that I had better speak for them. I did so immediately, but have heard nothing as yet concerning it.

"Very truly yours,"

DISCUSSION (EQUIPMENT).

There is no evidence in the report that documentary material, such as the minutes of the Board of Superintendents, or of the Committee on Buildings; communications from the supervisory staff; budget allowance, etc., etc., were consulted. Neither can any requests be found for such information or any indication of a critical study of the method of work, in matters of equipment, pursued by the supervisory staff, the Board of Superintendents, and the Committee on Buildings, etc.

A study of official communications from the elementary school principals to the supervisory staff under date of May 24, 1912, would have revealed the followings:

Manhattan.....	63 classrooms	4 classrooms not equipped
The Bronx.....	12 "	1 classroom " "
Brooklyn.....	46 "	14 classrooms " "
Queens.....	9 "	1 classroom " "
Richmond.....	2 "	1 " " "
 Total.....	132 "	21 classrooms " "

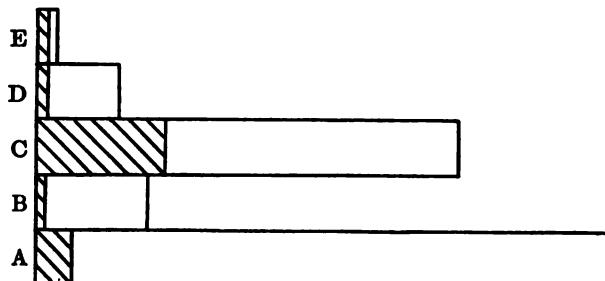


Fig. 1.—Shows relative number of ungraded classrooms not equipped
May 24, 1912.

A—Manhattan; B—The Bronx; C—Brooklyn; D—Queens; E—Richmond.

If this subject were pursued in the minutes of the Committee on Buildings the following results would have appeared:

EQUIPMENT ORDERED FOR UNGRADED CLASSROOMS FEBRUARY 1, 1912, TO MAY 24, 1912.	
February, 1912.....	1 classroom
March, "	6 classrooms
April, "	7 " "
May, "	1 classroom
 Total.....	 15 classrooms

There remained then at the time the Report was made, 2 classrooms in Manhattan and 4 classrooms in Brooklyn for which equipment was not ordered previous to May 24, 1912. Thus it will be seen that on May 24, 1912, there were six out of a total of one hundred and thirty-two classrooms for which equipment had not been ordered. Four and one-half per cent of all ungraded classrooms, (90 children out of 2500) furnish the basis of the investigator's statement that "*Many* children are not getting what they might get because of lack of equipment * * * in the classroom."

If the subject were pursued still further in order to understand just why a class authorized by the Board of Superintendents in November, 1910, was not yet equipped (April, 1912) with proper furniture, it would have led to a consideration of the budget allowances made by the Board of Estimate and Apportionment.

Since the recommendation as to equipment of ungraded classrooms appears to have been made on a basis of individual conferences with teachers and elementary school principals, and since the School Inquiry Report gives no evidence of a study of documentary material, method of work, budget allowances, etc., etc., and in view of the evidence here presented, which was in existence when the recommendation under discussion was made, it appears that this section of the School Inquiry Report is not justified by facts.

SUPPLIES.

In the School Inquiry Report the following statements are made as to the quality, quantity, and distribution of supplies.

"It is certainly the duty of the Department of Education to see that the present method of administering supplies is revised, so that the ungraded classes

shall not be hampered in their work by the difficulty of obtaining the material * * * which they need." (Page 22.)

"In the first place, very few classes have any adequate supply of material to work upon. * * * The classes that have enough wood, raffia, reed, yarn, twine, cloth, thread, needles, etc., to carry on their manual work are very few indeed. * * * In some classes the only lumber they have to work with is pieces of old boxes which the children are able to bring in. In another school remnants have sometimes been begged of John Wanamaker with which they could do some of their needlework. In other schools some of the mats and rugs which they have made were, when made, unraveled and torn to pieces in order that the material could be used again! Much of the material furnished is poor or not adapted to the defective child." (Page 6.)

"Practically all principals were agreed that some more efficient and available means for giving these teachers the material they require should be provided. Many state that some better method of distributing supplies should be provided for these classes so that they could have the material that they need, of the kind that they need, and when they need it; and not be compelled to spend their own money to get those things that they cannot get along without, and yet which they are not provided with by the authorities." (Pages 10, 11.)

DISCUSSION (SUPPLIES).

Supplies for ungraded classes are secured in the usual way as prescribed by the Department of Supplies. The principal makes requisition for such materials as he deems necessary, this is approved by the District Superintendent, or disapproved as he may see fit. The requisition is then forwarded to the Department of Supplies and the materials furnished more or less promptly. The amount and variety of materials found in several ungraded classes are not uniform. This variation, in all probability, is in direct proportion to the intelligent sympathy of the officials charged with the duty of securing supplies with the problems of the ungraded class.

The official records on file in the office of the City Superintendent of Schools, under date of May 24, 1912 (period of the School Inquiry), reveal the following:—

	63 ungraded classes	9 classes had trouble
Manhattan.....		
The Bronx.....	12 "	4 "
Brooklyn.....	46 "	10 "
Queens.....	9 "	0 "
Richmond.....	2 "	0 "
	—	—
Total.....	132 "	23 "

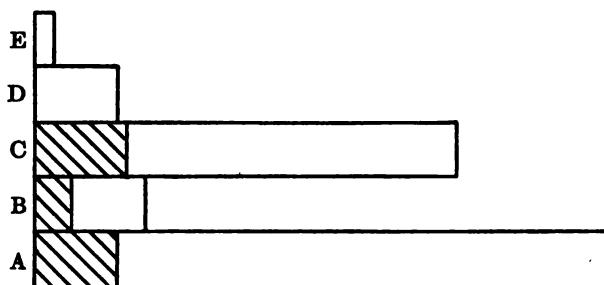


Fig. 2.—Shows relative number of ungraded classes having trouble about supplies,
May 24, 1912.

A—Manhattan; B—The Bronx; C—Brooklyn; D—Queens; E—Richmond.

A recent study of the printed reports of the school departments of institutions for the feeble-minded throws some light on the question of the "kind of supplies needed." The work indicated for New York City schools is done in all ungraded classes where possible and profitable.

<i>New York City Schools.</i>	<i>Waverley, Mass.²</i>	<i>Vineland, N. J.³</i>
Brush Making	Brush Making	Brass Work
Chair Caning	Cobbling	Needlework
Clay Modelling	Domestic Science	Raffia
Domestic Science	Farm and Garden Work	Reed
Cooking	Printing	Weaving
Cleaning	Needlework	Wood Work
Laundering	Raffia	
Serving	Reed	
Gardening	Weaving	
Metal Work	Wood Work	
Millinery		
Needlework		
Darning		
Embroidery		
Garment Making		
Mending		
Painting		
Raffia		
Reed		
Rush Bottoming		
Weaving		
Willow Basketry		
Wood Work		

² Massachusetts School for the Feeble minded, Annual Report, 1913, p. 35.

³ Vineland Training School, Annual Report, 1912, page 33.

In order that there may be more uniformity in the quantity of material supplied, it is suggested that (a) requisitions for ungraded class supplies be made on a separate blank and independent from any other requisition; (b) supplies so ordered should be delivered for and marked "Ungraded Class Supplies"; (c) an extra appropriation of three dollars per child be set aside for the purchase of supplies listed or unlisted, the same to be purchased through the Bureau of Supplies, at the request of the principal and the Department of Ungraded Classes.

The statement that "remnants have sometimes been begged of John Wanamaker" might have been made wide enough to include the fact that numberless ungraded children have asked grocers for soap boxes and egg boxes, and have had such educational treatment while working with them as was not possible in any other way. One has but to be familiar with the educational creed of John Dewey, the McMurrys, and the Herbartian School of teachers in general to appreciate that the best education, if not the only education possible is that which touches the present-day life of the child. To write letters to congressmen asking for seeds, to ask manufacturers all over the country for samples of their products, to ask John Wanamaker, Marshall Field and Company, the Belding Silk Company, the Hecker Flour Company, and dozens of others to give their old samples, or sample books, of cottons, velvets, wallpaper, threads, colors, etc., is to supply *motive* for English composition, letter writing, spelling, reading, number, sense training, study of textiles, geography, American government,—postal service, agricultural service, etc., etc., *ad infinitum*.

Dr. Arthur Holmes, commenting upon the organization and equipment of the special class conducted at the University of Pennsylvania Summer School of 1911, says:⁴

"Necessary as all these items of equipment are, nevertheless it remains true that the success * * * depended ultimately upon their [the teachers'] fundamental psychological viewpoint. They looked upon their work as a part of a consistent whole; they recognized clearly that to deal intelligently with the children in their hands it was necessary to make a psychological study of each individual child * * *. Their teaching, therefore, was not teaching in the ordinary accepted sense of the term, but it was in reality and

⁴ The Special Class for Backward Children, An Educational Experiment conducted for the Instruction of Teachers and other students of child welfare by the Psychological Laboratory and Clinic of the University of Pennsylvania. Reported by Lightner Witmer, Ph.D., Phila.: The Psychological Clinic Press, 1911; pp. 24 and 16.

essentially an individual treatment of a pathological case, and their genius showed itself in their ability to apply psychological principles in the ordinary classroom. * * * Undoubtedly the ideal special class teacher could produce wonderful results with her pupils if given nothing but an empty room, and the mechanical teacher would fail miserably of real results in an ideally equipped room, furnished with all the paraphernalia that mind could conceive or fancy desire. This fact will be noted in studying the methods * * * described further on and illustrated in the photographs of manual work done; for the chief piece of carpentry done by the pupils consisted of building a house out of an ordinary packing soap box."

APPENDIX A.

UNGRADED CLASS VS. SPECIAL SCHOOL CENTERS.

In order to secure the greatest economy of time and of effort, as well as to bring to the children the broadest and most comprehensive opportunity, two types of organization and systematization have developed, where work for mentally defective children has been inaugurated.

The first and oldest is the special school, which is found as the "Hilfsschule" and the "auxiliary" school in Germany; the "secondary" school in some Belgian cities and the "special school center" in England. The second type is the special class found chiefly in this country and in Canada and known as "the ungraded class," "the special class," or as "classes for special instruction."

The special school idea makes necessary the expenditure of rather large sums of money for the erection and equipment of buildings. To these buildings the children are required to travel. In England the law provides that the transportation of the child and of a guide who is to bring him, must be met by the community.

The special school, as its name in this connection indicates, is a school made up entirely of mentally sub-normal children. The number in a school varies from one hundred to four hundred, according to the number of such children found in a given area. The children represent all ages, abilities, abnormalities of physical and mental make-up. The English special school center is typical of the special school idea and for the purpose of presenting this method of organization it will serve as illustration. While considering this it should be borne in mind that the special school tends to and does separate in play as well as in work the abnormally dull child from those not so characterized. This complete segregation

in school is brought about by providing a school building to which only dull children are sent. This building, usually two stories high, is built on a remote corner of the playground used by the regular county council school children but separated from it by a high board fence. For this special school building there are separate entrances, separate playgrounds, separate gymnasiums, lavatories, passages and offices. All of this is to prevent the association in school of the mentally defective and the so-called normal child. One has the impression that here is something different and depressing and the question arises what are the advantages afforded by the special school. The great gain from the point of view of the work of the school is found in the possibilities of grading the children on the basis of mental power. This allows the teacher to do class work rather than group and individual teaching. Where class work can be done a few more children can be cared for by each teacher than would be possible otherwise. To get the graded classes within the special school and thereby to care for a few more children per teacher is the great advantage of the special school idea. Other things being equal, this then would commend itself to the school administrator. Before deciding, however, it is one's duty to inquire whether, other things being equal, there are any disadvantages in the special school idea. If so, what are they?

The great disadvantage in the special school idea has to do, not so much with the work of the school, though on this side it is open to criticism, but with the individual child who is sent to the special school. The special school with its "separateness" emphasized in its construction and in its administration, differentiates, sets aside, classifies, and of necessity, stigmatizes the pupils whom it receives. How could it be otherwise? Mental sub-normality is so often associated with lack of beauty, proportion, and grace in the physical body of the child, that we may say mental sub-normality and physical anomalies go hand in hand. Now bring together a rather large group—a hundred such children—and there are assembled countless degrees of awkwardness and of slovenliness; infinite variations in over-development or in arrested development and a dozen other mute witnesses of a mind infantile or warped. It would be next to impossible to save these helpless ones from the jibes of a not too kind world. The school which is to serve best must conserve the moral as well as the mental, the spiritual as well as the physical, nature of the pupil.

The special class rather than the special school seems to meet American conditions best. It is found in the school systems of Springfield, Mass.; Worcester, Mass.; Chicago, Ill.; Los Angeles,

Cal.; Boston, Mass.; Cleveland, Ohio; and New York City. Some years ago Philadelphia organized a system of special schools, but is now in process of establishing special classes because of the obvious disadvantages, in addition to which the opposition of parents whose children were sent to special schools was an insuperable barrier to the hoped-for success.

The special class—the ungraded class in New York City—occupies a classroom in an ordinary elementary school building. It cares for the mentally sub-normal children in that immediate neighborhood. In such a class there are fifteen or sixteen children. It forms one of forty or fifty classes in the school. The ungraded class child is segregated for the purpose of instruction *only*. He goes to and from school with the children who live near him; he plays with the children who attend his school, as well as with those in his class; he uses the same stairways, gymnasiums, lavatories, passages and halls. He attends the opening exercises of his school; he associates in school and on the playground with the children whom he meets on the street outside of school hours. In all its work the ungraded class emphasizes, for the purpose of preserving and enhancing his self-respect and his personal esteem, those things which the mentally sub-normal child has in common with his more fortunate brothers and sisters; it believes his differences are already too apparent; it preaches as well as practices its belief and knowledge that his mental power is the same as theirs, only of less degree. By having one such class in an elementary school it is possible to get the moral support of the whole body of pupils in developing and molding the child who is "different". May this class not be made an opportunity for the normal child to feel the obligation of the strong to the weak? A school organization such as this is "twice bless'd".

The special, ungraded class offers to the mentally defective child the opportunity for individual instruction while it presents to him, when he is able to grasp it, the chance of doing class work. An illustration will make this plain. A child, hopelessly unable to comprehend even the simplest truths of arithmetic and further handicapped by a speech defect, which prohibited his taking part in a recitation period requiring spoken language, was found to have more than ordinary ability and interest in reading. The ungraded class teacher was able to help him along the line of his interests. When he was able to write his answers he attended a sixth-year class for those studies in which he could excel. His own self-respect and the increased prestige of the ungraded class were the result of his excellent work. In many schools the upper grade children are invited to visit the ungraded classroom to see the manual training

exhibit. The children who were in danger of being pseudo-intellectual snobs because of scholastic achievements, realized when viewing the excellence of work identical with their own shopwork exercises, that to each has been given a talent, and that this group of "different" children has contributions to make to the life of the school no less valuable because they are unlike.

The special class idea carries with it the possibilities of grading the children. This is, perhaps, more easily achieved in urban communities. More essential, perhaps, than grading "ungraded" class children on the basis of mental power is the necessity of separating them on the basis of sex. The older boys (from fourteen to sixteen years) should, whenever possible, be put in a class by themselves in a boys' school. This is a logical separation based on the principle that ungraded children are to be treated as nearly like other children as is desirable for the best good of all. The older girls and younger boys may be left in the same class until another classification can be made when the older girls should be organized as a class in a girls' school. Until there is closer co-operation between the state institutions for defective children and the public schools, it is desirable, as soon as the teaching supply is adequate, to make a sub-classification on the basis of mental power; *i. e.* separate the high grade from the low grade. This will give a class for older high grade boys and one for older low grade boys; a class for younger high grade and for younger low grade boys. A similar classification will exist for the girls, thereby bringing the advantages of grading without the dangers and expense of the special school. This plan of organization is being put in operation as rapidly as possible. The most unqualified approval is given to it by the school principals in whose charge the classes for older boys have been placed.

(To be concluded.)

RETARDATION AS INDICATED BY ONE HUNDRED CITY SCHOOL REPORTS.¹

By HILDA VOLKMOR AND ISABEL NOBLE,
Stanford University, Cal.

This paper is a survey of the school reports of one hundred cities, made with a view to finding out what has thus far been done by the city schools, to study and to solve the problem of retardation. Its purpose is not to supplement the excellent studies of retardation made by Ayers, Strayer, and others, but to see to what extent school practice has actually been affected by the past decade of investigation and discussion in this field.

These hundred cities were selected at random from the reports available in the library of the department of education at Stanford University. The distribution of the cities as to size and locality is indicated in table I. It will be seen that they vary in size from 7000 to over 500,000 population, and that they are well distributed over the entire country. The showing should be suggestive of the practical consideration which has been given to the problem thus far. Not enough of the 1913 reports were yet available for this study, hence it closes with the year 1912.

Of the hundred cities reviewed, 26 made no reference whatever to the problem. Table I shows that these 26 cities are of all sizes, and table II, that they are scattered throughout all sections of the country. That is, size of city and locality are not the factors which

TABLE I.

Population of Cities	Number of Cities in						Retardation		
	New Eng.	Mid. Atl.	South	West.	Cent.	Total	Not Men- tioned	Re- ferred to	Sta- tistics Given
7,000 and under 15,000	7	3		1	4	15	9		6
15,000 " 25,000	4	2	1	3	1	11	2	3	6
25,000 " 50,000	7	5	1	3	6	22	7	5	10
50,000 " 100,000	6	6	2	1	5	20	2	6	12
100,000 " 500,000	1	8	4	4	8	25	6	5	14
500,000 and over.....	1	3			3	7		4	3
Total.....	26	27	8	12	27	100	26	23	51

¹ This study was made at the suggestion, and under the direction of Prof. J. B. Sears, of Leland Stanford Junior University.

have determined the spread of this movement. Twenty-three made some reference to the problem, but offered inadequate statistics, and to all appearances had not treated the question seriously, *i.e.* school practice had not been materially affected by it. In 51, either careful studies had been made, or fairly complete statistics were

TABLE II.

Section of United States	Retardation		
	Not Mentioned	Referred to	Statistics Given
New England.....	6	6	14
Middle Atlantic.....	4	6	17
Central.....	9	5	13
Western.....	5	3	4
Southern.....	2	3	3
Total.....	26	23	51

presented, from which the amount of retardation could be computed. The distribution of these 51 cities as to size and locality as seen in tables I and II again shows that the movement is not local, and that it is not confined to large cities alone.

The movement began in 1904 in New York City, and the annual report of the superintendent for that year is the pioneer document. By chart I the rapidity with which the schools over the country began to concern themselves about the problem may be seen. This chart includes all the 74 cities which had touched upon the problem at all, and shows the number *beginning* the study each year, from 1904 to 1912. By 1909, 43 cities had made some reference to the problem, and after that the movement slackened somewhat. It is to be remembered that we are dealing with only one hundred cities. The question whether the next hundred would show the same tendency is not answered here. The history of the 51 cities which have dealt more systematically with the problem, is shown in chart II. Here the height is not reached till the year 1911, when 18 per cent of the 100 cities examined made definite studies of their laggards.

The amount of retardation shown by these reports may not add to what is commonly known from other sources, but it does show what one can find on the subject in city school reports, and it also shows some interesting facts in the way of difference between maximum and minimum retardation in the same city, and differences in average retardation in various cities and in different years.

RETARDATION INDICATED BY SCHOOL REPORTS. 77

Because various definitions of retardation have been used in different cities, and by the same city in different years, the amount of retardation in the schools of one city as shown by its report, can not fairly be compared with the corresponding figures given in the

Cities

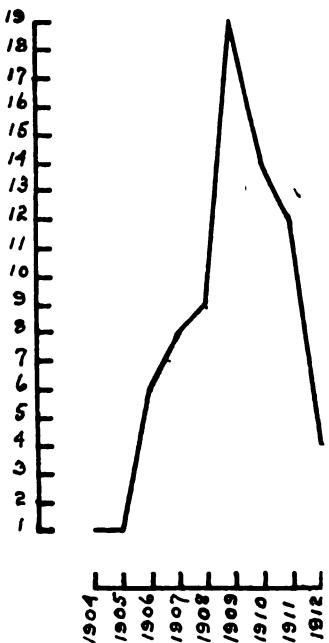


CHART I.—SHOWING DATE OF BEGINNING OF STUDY OF RETARDATION (INCLUDES ALL CITIES [74] MAKING ANY REFERENCE TO THE PROBLEM).

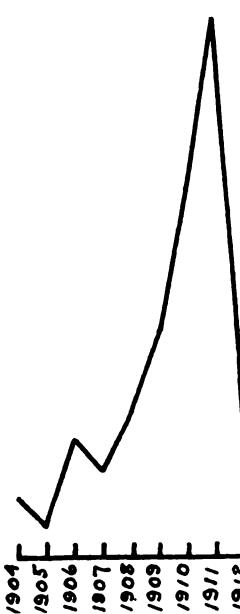


CHART II.—SHOWING WHEN FIRST STUDY OR STATISTICS WERE FURNISHED (INCLUDES 51 CITIES).

report of another city. There are two general definitions used: the one based on normal age, and the other on progress. Normal age for grade one is in some cases, 6-7 years, in others, 6-8, and at least in one case, 6-9. This makes comparison difficult if not impossible.

The amount of retardation is shown in some form, as average retardation for all the grades, or maximum, or minimum, and often all three. In some cases the amount was computed from the statistics given. These are shown in tables III, IV, V, VI and VII. Table III shows figures from 46 cities. Ten of these cities offered figures for two different years, and one city offered figures for three different years. Thus we have 59 statements, from 46 city reports,

of the average retardation for all grades. These reports appear within the interval studied (1904-1912). As the record for no city appears more than once in any one year this chart shows the history of the movement very well. The studies were well under way in 1910, and twenty cities reported on this item in 1911. Why the number should drop to eleven in 1912 does not appear. The range in the amount of retardation is an interesting item on this table.

TABLE III.—SHOWING PER CENT AVERAGE RETARDATION FOR ALL GRADES. INCLUDES 59 RECORDS FROM 46 CITIES. IN SOME INSTANCES THE ITEM WAS NOT GIVEN BUT WAS COMPUTED FROM STATISTICS PRESENTED.

1904	1905	1906	1907	1908	1909	1910	1911	1912
39.0		21.6	7.5	28.5	13.8	7.5	5.0	8.2
		26.3	10.6	32.0	31.1	8.0	6.6	15.0
		49.6	21.4		31.5	9.0	7.3	25.0
			37.1			9.2	10.6	28.0
			51.3			10.0	11.1	29.0
						10.4	14.0	29.8
						11.7	14.8	30.0
						15.5	16.0	42.0
						16.7	23.3	43.0
						28.0	24.0	46.5
						30.2	27.3	63.1
						32.8	28.0	
						35.0	29.0	
						36.0	29.2	
							33.3	
							34.0	
							37.0	
							37.8	
							47.4	
							62.7	

In 1904 there is one case only, New York City, with a retardation of 39 per cent. In 1906 the range, with three cities, is between 21.6 and 49.6; in 1907, with five cities, between 7.5 and 51.3; in 1910, with fourteen cities, the range is between 7.5 and 36.0; in 1911, with twenty cities, between 5.0 and 62.7; and in 1912, with eleven cities, between 8.2 and 63.1. To what extent this great range may be due to the use of different standards of measurement is hard to say, but it is evident that there is yet no settled standard of what is a reasonable amount of retardation to expect. At least no such standard is being used, else this wide variation would not exist.

RETARDATION INDICATED BY SCHOOL REPORTS. 79

TABLE IV.—SHOWING PERCENTAGE OF MAXIMUM RETARDATION (NO CITY INCLUDED MORE THAN ONCE).

1909	1910	1911	1912
12.4	3.0	17.0	39.0
40.2	14.0	25.0	44.0
	21.8	30.0	44.0
	24.6	34.4	47.6
	52.0	40.0	48.8
		42.8	62.3
		43.0	64.0
		44.6	78.2
		45.0	
		46.0	
		50.0	
		53.0	
		54.0	
		55.0	
		71.6	

TABLE V.—SHOWING PERCENTAGE OF MINIMUM RETARDATION. (NO CITY INCLUDED MORE THAN ONCE.)

1909	1910	1911	1912
1.8	0.0	2.4	10.0
19.3	4.2	7.0	12.0
	5.8	7.7	13.0
	6.0	8.0	17.5
	19.0	8.0	32.0
		10.1	37.0
		12.0	37.9
		13.0	
		13.0	
		14.0	
		18.0	
		18.0	
		27.9	
		47.4	

Table IV shows thirty records, from thirty cities, within the years 1909-12. The variation in amount is much the same as in table III. Table V shows the range of the minimum retardation in a similar way. The city with 0.0 per cent minimum retardation says there is no retardation in its schools. (It is excluded by definition only.)

Where this maximum and minimum retardation appears, is of some importance, and is shown in table VI, which includes each city but once, but covers the years 1904-12 inclusive. It will be

TABLE VI.—SHOWING THE NUMBER OF CITIES IN WHICH THE MAXIMUM AND THE MINIMUM FALL IN A GIVEN GRADE.

Grade	No. Cities Max.	No. Cities Min.
VIII	2	2
VII	4	3
VI	8	
V	12	
IV	3	1
III		
II	1	
I	5	25

seen that the minimum retardation falls most frequently in grade one, and only five of the thirty-one cities reporting have found the minimum above grade six. The maximum falls heavily in grade five, and probably if elimination could be figured out, it would appear quite as often in grade six.

One more item of interest is the difference between the maximum and the minimum in the same city, and for the same year. Table VII shows twenty-four such cases, mostly given in the reports for the last two years studied. Whether the ratio of minimum to maximum is more constant in these twenty-four cities than mere chance would make it, is a question.

TABLE VII.—24 CASES FROM 24 CITIES, SHOWING PERCENTAGE OF MAXIMUM AND MINIMUM RETARDATION. (NO TWO REPORTS FROM SAME CITY.)

1900		1910		1911		1912	
Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
12.4	1.8	21.8	4.2	7.7	4.3	39.0	10.0
40.2	19.3	24.6	5.8	14.0	4.0	44.0	12.0
		52.0	19.0	17.0	2.4	44.0	13.0
				25.0	7.0	48.0	17.5
				30.0	8.0	62.3	37.0
				34.4	8.0	64.0	32.0
				42.8	13.0	78.2	37.9
				44.6	10.1		
				45.0	12.0		
				50.0	18.0		
				53.0	18.0		
				55.0	27.0		

It is also possible to show for eleven cities what the average retardation was in two different years. In ten of the cities the amount shown in the later report was lower than that shown in the earlier one. There is no way of knowing that this was due to lowering of standards, to different methods of making up the study, to better teaching, or to what. It is interesting that in only one case was the second percentage higher than the first. In one case it dropped from 9 per cent to 5 per cent in one year. It is probably correct to assume that when the problem was defined by the first inquiry, definite steps were taken to meet it, and the result is a lowering of the proportion of pupils retarded.

The causes for retardation mentioned in the reports are thirty-eight in number, only nineteen of which are mentioned more than

once, and only nine of which are mentioned more than four times. Some of the most prominent causes are "absence," mentioned by 26 cities; "mental dulness," mentioned by 19 cities; "physically defective," by 18 cities; "illness," by 13; "race," by 13; "late entrance," by 10; "change of school," by 8; "crowded school room," by 7. "Poverty" is mentioned but once. Very general causes, which may mean almost anything or nothing, are often mentioned.

Thirty different solutions of the problem were proposed, only 12 of which were proposed by more than 4 different cities. "More frequent promotions" was used or proposed by 14 cities; "ungraded classes," by 30; "special schools for special classes of dull or bright," by 7; "individual help for slow pupils," by 11; "continuation schools," by 14; "medical supervision," by 8; "summer school," by 8. "School nurse" is proposed as an aid by only one city; "departmental teaching," by one; "enforce child labor law," by one.

Aside from this rather bare collection of facts, the reports show many indications that the principles of scientific management are rapidly being introduced into the administration of schools, that actual standards of measurement are being developed by men in the practical field, and that they are not only applying their standards, but that they are also relying upon the results of their application.

The early expert studies were so frequently mentioned and made use of by the reports, that one is convinced that the money which the United States Commissioner's office and the Sage Foundation have spent in trying to establish standards in this field, has been many times returned in actual saving of the cost of repeaters. In brief, the educational historian of the future will find the city school documents of the past decade a fruitful source on the subject of retardation.

CLASS SIZE AND SCHOOL PROGRESS.

BY PHILIP A. BOYER,

Thomas Jefferson Public School, Philadelphia.

It is generally accepted that there are limits to the efficient educative contact between pupil and teacher. The number of pupils per teacher as set by the educational theorist varies from one to thirty or forty. In practice, classes of from fifteen to thirty are the rule in private schools where expense is not an all-important determining element. In public school systems where the budget must be pruned with care, regular classes range in size from forty to fifty, with by far the largest number of classes nearing fifty and with a few classes well above that figure. Do classes of this size permit of maximum efficiency in educational work? If not, how small should classes be in order to meet efficiency requirements? And, we must add, would the increased efficiency of smaller classes warrant the additional expenditure which their establishment would necessitate?

In order to discover the relation existing between the size of classes and school progress, an investigation was made of the promotion records for June, 1913, of the public schools of Philadelphia. In each of the city's ten districts, the classes were divided according to size into six groups as follows: under 30, 30 to 34, 35 to 39, 40 to 44, 45 to 49, 50 and over. The percentage of promotion was then determined for each group. Individual classes showed the widest possible variations in promotion percentages, there being one class in which no promotions were made, and several in which 100 per cent were advanced. In general, however, the variation was limited to a range of twenty points from 75 to 95 per cent with the highest rates occurring most frequently in the upper grammar grades.

In District No. 7, of the four hundred twelve regular classes, there are ten classes in Group I (under 30), twenty classes in Group II (30-34), and eighty classes in Group III (35-39). The number of classes with less than forty belonging (one hundred ten in all) is 27 per cent of the total number of classes in the district. The largest number of classes in any one group is found in Group IV (40-4) which has one hundred thirty-nine classes. Groups V and VI show one hundred four, and fifty-nine classes respectively. Reference to table I will show these groups and the percentage of the total number of classes which each constitutes.

TABLE I.—DISTRIBUTION OF CLASSES AMONG SIZE GROUPS—DISTRICT NO. 7.

Groups	Number of Classes in Each Group	Per Cent of Total Number of Classes
I. (-30).....	10	2.4
II. (30- 4).....	20	4.8
III. (35- 9).....	80	19.4
IV. (40- 4).....	139	33.7
V. (45- 9).....	104	25.2
VI. (50+).....	59	14.3
Total.....	412	99.8

The ten classes of Group I are distributed among five grades and the percentages of promotion are higher than those of all other groups in three of these five grades, the 6th, 4th, and 1st. The twenty classes of Group II are distributed among seven grades and show highest promotion percentages in three of these grades, the 8th, 5th, and 3rd. The eighty classes of Group III represent all grades and show highest promotion percentages in two grades, the 7th and 2nd. Combining the three small groups, which, as we have seen, comprise 27 per cent of the total number of classes in the district, we find that in every one of the eight grades, the highest rate of promotion is secured in classes having less than forty on roll. That school progress, as indicated by promotion percentages, does not vary greatly save in exceptional instances, is indicated by table II, where percentages are given for each grade in each group.

TABLE II.—PROMOTION PERCENTAGES IN EACH GRADE-GROUP—DISTRICT NO. 7.

Groups	Grades								Total Gram.	Total Primary	Total
	8	7	6	5	4	3	2	1			
I. (-30)	88.3	....	<u>96.4</u>	62.5	<u>87.0</u>	....	....	<u>90.8</u>	85.3	<u>89.4</u>	<u>87.4</u>
II. (30- 4)	<u>90.3</u>	....	<u>76.4</u>	<u>87.9</u>	70.7	<u>94.1</u>	81.8	<u>70.9</u>	<u>88.2</u>	73.7	79.5
III. (35- 9)	84.5	<u>86.5</u>	78.2	82.5	84.4	<u>85.0</u>	<u>82.9</u>	73.9	83.1	81.1	81.9
IV. (40- 4)	89.8	85.7	81.7	83.2	81.2	82.5	<u>82.5</u>	81.9	83.9	82.0	82.8
V. (45- 9)	89.0	83.4	81.9	80.4	82.8	81.4	77.8	74.9	81.9	79.1	79.9
VI. (50+)	....	66.7	81.7	80.5	79.7	77.3	82.0	73.7	80.1	78.8	79.1

Nevertheless, that minority of pupils fortunate enough to find themselves in small classes would seem to be the favored few.

The complexity of the situation, the many diverse factors which enter into promotion, do not warrant us in expecting to find

a regular and gradual decrease in promotion rates as classes increase in size. But table II shows some glaring irregularities, *e. g.* the lowest percentages in four grades, (8th, 6th, 4th, 1st), are found in the group next larger than the one showing the highest percentage. Again, in the fifth grade an exceptionally low percentage is shown in the smallest size group. This represents only one class, however, and is an illustration of the operation of other forces than class size. It is probable that in this small class were concentrated the "slow" fifth grade pupils of the school concerned in order that special attention might be afforded. That such irregularities are exceptional is indicated by the fact that on massing together the grammar classes, the highest percentage, 88.2, falls in Group II, even though Groups I, II, and III, have shown three lowest percentages. The same is true of primary classes which show two lowest percentages in Group II, while the highest percentage for total primary is found in Group I (89.4). In the total of all grades the highest percentage, 87.4, is found in the smallest group, and the other percentages vary less, as might be expected.

The irregularities of table II, together with the fact that a somewhat similar investigation pursued by Dr. O. P. Cornman,¹ in District No. 6, in January 1909, showed very different results, led to the extension of this study to include the other nine districts of the city. Classes were distributed into six size groups, promotion percentages computed, and tables similar to table II constructed. In none of these nine districts were the highest percentages concentrated so overwhelmingly in the smallest size groups. Districts No. 1 and 5 each showed seven highest percentages in groups under forty; Districts Nos. 2, 4, and 10, each showed six grades having highest percentages in groups of classes under forty with two highest percentages in larger class groups. Districts Nos. 3 and 8 each had five highest percentages in groups under forty and three highest percentages in larger class groups. Hence, in these eight districts the great majority of highest percentages was in classes under forty, and it may be assumed that the greatest school progress was made in these smaller classes which constituted from 10 per cent (District 3) to 30 per cent (District 10) of the total number of classes in the district. Table III shows the number of classes in each district, the percentage of this number of classes which had less than forty on roll, and the number of the highest percentages found in Groups I, II, III (under forty) and in Groups IV, V, VI (over forty).

¹ Cornman, O. P. *Size of Classes and School Progress.* THE PSYCHOLOGICAL CLINIC, Vol. III, p. 206.

TABLE III.—PER CENT OF CLASSES UNDER 40 AND THE NUMBER OF HIGHEST PROMOTION PERCENTAGES BY DISTRICTS.

District Number	Total Number of Classes	Per Cent of Classes in Groups I, II, III	No. of Highest Promotion Percentages in Groups I, II, III	No. of Highest Promotion Percentages in Groups IV, V, VI
1.....	258	20	7	1
2.....	352	18	6	2
3.....	453	10	5	3
4.....	320	20	6	2
5.....	416	29	7	1
6.....	368*	24	4	4
7.....	412	27	8	0
8.....	346	25	5	3
9.....	367	22	3	5
10.....	310	30	6	2
Total.....	3602	22.4	57	23†

* Two schools omitted because of special conditions.

† 6 of these are in Group VI)

In District No. 6, where the highest rates are evenly divided, the four highest percentages found in the larger classes (Groups IV, V, and VI) are all in grammar grades. There are no grammar classes in Group I. The highest percentages are only very slightly in advance of the percentages shown in the smallest groups except in the sixth grade, where a specially low percentage is shown in Group II. In the four primary grades the highest rates are found in the three smallest groups. (Table IV.)

TABLE IV.—PER CENT PROMOTED BY GRADE-GROUPS—DISTRICT NO. 6.

Groups	Grades							
	8	7	6	5	4	3	2	1
I. -30.....	....	....	....	....	83.6	89.0	62.0	89.2
II. 30- 4.....	91.8	90.9	64.5	....	75.4	73.8	90.8	87.1
III. 35- 9.....	84.0	88.4	86.2	86.0	88.7	80.0	83.8	67.0
IV. 40- 4.....	88.3	91.6	79.9	85.3	85.1	76.8	85.5	65.3
V. 45- 9.....	89.7	82.6	86.3	83.8	87.2	85.9	85.7	77.1
VI. 50+	93.3	79.8	85.5	86.2	84.4	75.0	80.7	68.7

District No. 9 is the only one having the greater number of highest percentages in groups of classes over forty. Examination

of table V will show that of the five highest percentages in larger groups, four are found in Group IV (40-4) and only one in the very largest group (50 and over). Even this is not a bad showing when we remember that only 22 per cent of the total number of classes in the district are found in Groups I, II, III, and that these groups have three of the eight highest percentages.

TABLE V.—PER CENT PROMOTED BY GRADE-GROUPS—DISTRICT NO. 9.

Groups	Grades							
	8	7	6	5	4	3	2	1
I. -30.....	87.0	<u>93.1</u>	....	....	75.9	<u>89.3</u>	....	80.0
II. 30- 4.....	86.2	91.5	<u>100.0</u>	81.4	81.3	<u>82.4</u>	76.9	72.7
III. 35- 9.....	78.4	82.2	<u>86.1</u>	81.6	85.2	86.7	83.8	71.4
IV. 40- 4.....	<u>92.4</u>	83.5	82.3	<u>85.5</u>	84.8	81.9	<u>87.0</u>	<u>83.1</u>
V. 45- 9.....	84.4	87.1	<u>81.2</u>	83.3	<u>77.2</u>	81.8	84.5	76.9
VI. 50+.....	....	90.1	87.0	77.9	<u>87.4</u>	78.2	81.6	77.4

Re-examination of table III will show that of the total number of classes considered (3602), only 22.4 per cent have less than forty pupils belonging. In these 808 favored classes there are fifty-seven instances of highest district promotion percentages, while the classes larger than forty, numbering 2794, had only twenty-three highest district percentages. That 22 per cent of the city's regular classes secured 71 per cent of the total number of highest district promotion percentages is significant. That each one of the 22 per cent of the classes had less than forty pupils belonging, seems to indicate that the size of class is an important element in those factors which go to make for school progress. It will be remembered, however, that these same small classes (Groups I, II, III) also showed some of the lowest district promotion percentages. Even though these were shown to be exceptional cases, by the fact that their effect was almost imperceptible on percentages for total grammar, total primary, or grand total (table II); nevertheless, they succeed in weakening conviction to a certain extent.

The effects of extraordinary conditions are sometimes shown plainly in district percentage tables such as the three given above. For example, in one district the rate of promotion in first grade classes of Group I (under thirty) is .0 per cent. This is the record of one abnormally small class (twenty-three) where manifestly abnormal conditions prevailed. On the other hand it is conceivable that a large class, working under peculiarly good conditions, might show an exceptionally high percentage. Indeed, it has sometimes

been the practice in large schools to segregate the brighter pupils of a given grade into a large class in order to permit of increased personal attention to the particular shortcomings of duller pupils in smaller classes. These irregularities sometimes loom large in district percentage tables, though their occurrence has not been general. However, by massing together the number belonging and the number promoted for each district grade group, percentages for the entire city have been computed. Here the influence on promotion of other factors will diminish to smaller proportions, and the relation of class size to promotions will be more definitely indicated.

Examining first the distribution of classes into the various grade groups, we find that Group I (under thirty) contains the smallest number of classes in all grades except the eighth, and that Group II contains the next smaller number of classes in all grades except the eighth and seventh. Group I comprises seventy-three classes, and Group II, two hundred two classes. Group III (35-9) contains nearly twice as many classes as Groups I and II combined (*i.e.* 533). These three smaller groups total 808 classes, or 22.4 per cent of the entire number. Groups IV and V include slightly over one thousand each, and it is here (between forty and forty-nine belonging) that more than one-half (58.5 per cent) of the classes are congregated. Classes in Group VI (fifty and over) number 686, or 19 per cent of the total number. This is nearly as many as the number of classes with less than forty pupils, so that the following rough generalization may be made:—one-fifth of the classes have less than forty belonging, three-fifths have between forty and forty-nine, and one-fifth have fifty or more. (Table VI.)

TABLE VI.—TOTAL NUMBER OF CLASSES IN EACH GRADE-GROUP.

Groups	Grades								Totals	Per cent of Total
	8	7	6	5	4	3	2	1		
I. 30...	25	7	4	5	6	6	6	14	73	2.0
II. 30-4...	50	30	15	21	26	15	14	31	202	5.6
III. 35-9...	48	55	63	43	95	70	75	84	533	14.8
IV. 40-4...	47	91	127	109	171	168	150	166	1029	28.5
V. 45-9...	26	62	102	169	155	199	187	179	1079	29.9
VI. 50+...	6	21	53	101	88	109	146	162	686	19.0
Totals.....	202	266	364	448	541	567	578	636	3602	99.8

Turning now to the promotion rates of these various groups of classes (table VII), it will be seen that highest promotion percentages

in the seventh, fifth, third, and first grades are found in those classes of the city which have less than thirty pupils belonging. There are but seventy-three such classes, forming only 2 per cent of the total number, yet highest promotion rates are shown in four of the eight grades. Group II shows one highest percentage, in the eighth grade, while in Group III are found the remaining three highest rates, *i.e.* in the sixth, fourth, and second grades. Combining the three smaller groups we find that the 808 classes under forty, which constitute but 22.4 per cent of the total number, show highest promotion percentages in all eight grades. It will be remembered that it was this same group of smaller classes that had fifty-seven of the eighty highest district percentages (table III).¹

TABLE VII.—PER CENT OF PROMOTION IN TOTAL NUMBER OF CLASSES IN EACH GRADE GROUP.

Groups	Grades								Total Gram- mar	Total Pri- mary	City Total
	8	7	6	5	4	3	2	1			
I. -30	89.2	95.8	83.2	86.3	83.0	85.8	72.6	80.8	89.8	80.7	85.6
II. 30-34	91.0	89.5	82.4	86.0	79.4	81.6	83.9	77.7	88.5	79.9	84.9
III. 35-39	88.2	88.1	85.1	84.4	93.1	84.8	84.1	76.4	86.6	84.6	85.4
IV. 40-44	88.7	87.3	83.6	83.8	83.9	81.6	84.0	78.3	85.1	85.5	85.4
V. 45-49	90.2	87.3	82.8	83.6	83.6	81.9	83.9	78.3	84.4	81.9	82.7
VI. 50+	88.1	84.8	83.7	81.2	82.8	80.4	82.4	74.1	82.5	79.3	80.1

Further examination of table VII will show that only in the seventh and fifth grades is there a gradual shrinkage of percentages as the classes grow larger in size, but this is not surprising in view of the unequal distribution of classes among the various size groups. Moreover, the lowest rates in the sixth, fourth, and second grades are located in groups smaller than those indicating highest percentages. But these apparently unwarranted stragglers are more than counterbalanced by the fact that in the remaining five grades,

¹ Comparison of tables III and VI develops the following table of broad generalizations:

Class size-groups	Proportion of total number of classes	Proportion of total 80 highest district percentages
Under 40.....	1/5	3/4
40 to 49.....	3/5	1/5
50 and over.....	1/5	1/13

(eighth, seventh, fifth, third, and first) the lowest rates are shown in the largest size-group, *i.e.* fifty and over.

On combining totals for the four grammar grades, a regular descent in promotion rate is shown, *i.e.* from 89.8 per cent in Group I to 82.5 per cent in Group VI (see column 9, table VII). Could we stop here, a fairly clear case for smaller classes might be established; but total primary rates seem to indicate that medium sized classes have the advantage. Groups III and IV show an average of 85 per cent while both smaller and larger groups hover around the same rate, 80 per cent. In the percentages of the grand total of elementary pupils, these advantages neutralize each other and approximately the same progress is indicated for all classes having less than forty-five belonging. In each of these four groups the rate is very close to 85 per cent and the falling off in rates shown by larger classes is correspondingly more noticeable. These lower rates (82.7 per cent in Group V and 80.1 per cent in Group VI) are seen to be of no mean significance when it is recalled (table VI) that they are the promotion percentages of 48.9 per cent of the total number of classes in the city, and that these classes contain 55 per cent of the total number of elementary pupils.

The statistics would seem to indicate 85 per cent as a normal rate of progress. That this rate was not attained by more than half of the pupils in the system, is worthy of notice. The promotion rate of this majority of pupils in classes averaging fifty was 81 per cent. From the figures here presented, it seems reasonable to suppose that if these pupils had had the advantage of instruction in classes of forty-five or less, they, too, would have shown an average rate of progress of 85 per cent. In other words, four in every hundred of these 87,000 pupils repeated a term of school work (or did some drop out?) because of too great dissipation of the teacher's energy. The cost to the city of this retardation at \$13.00 per pupil per term, is over \$45,000; the added expense to the home is great; but more important than both of these is the loss to the individual child in confidence in his own ability to achieve.

"Superintendent Elson of Cleveland has estimated that one-eighth of the money spent on education goes to pay for repetition, maladjustment, and failure to see the needs of school children."¹ The New York Committee on School Inquiry finds that, "Conditions favorable to a maximum rate of promotion have not been studied and provided for." However, on a basis of confessedly inadequate statistical returns, the following observation is made:

¹ Denison, Elsa. "Helping School Children," N. Y., Harper, 1912, p. 306.

"As promotions were made in the February-June term of 1911, oversize classes, *i.e.* classes having more than 50 pupils, contributed but slightly, if at all, to non-promotion, *i.e.* to congestion. This statement does not mean, however, that educational opportunity and achievement were as good in classes over fifty as in classes under fifty. We recommend that special investigations be made into the educational efficiency of classes of varying sizes, *i.e.* how much less efficient oversize classes are than smaller classes."¹

Scientific management has entered the educational field. The Courtis Tests in Arithmetic and the Hillegas Scale in Composition, when applied to the educational efficiency of classes of varying sizes, will probably show the effects of overcrowding with a far greater degree of accuracy than a study based solely on promotion rates, for these rates, it must be recognized, are often influenced by factors foreign to the individual pupil's capacity. However, until such complex studies can be made, it would seem advisable to heed the following recommendation of the New York Committee to which this study lends its sanction: "In view of the slightly lower rate of promotion for oversize classes, but more particularly because of the acknowledged educational disadvantages of such classes, . . . and the prevailing practice in other cities, we recommend that all classes having more than fifty pupils should be reduced to classes of forty-five pupils."²

¹ "School Efficiency; A Constructive Study," by Paul H. Hanus, p. 31.

² *Ibid.*, p. 33.

REVIEWS AND CRITICISM.

The Backward Child, A Study of the Psychology and Treatment of Backwardness.

By Barbara Spofford Morgan. Introduction by Elizabeth E. Farrell, Inspector of Ungraded Classes, New York Public Schools. New York: G. P. Putnam's Sons, 1914. Pp. vii+263.

Mrs. Morgan is not concerned with children who should be in institutions. The child considered by her "stands on the borderland between the normal and the feeble-minded and the way in which his mental shortcomings are treated may determine whether he ultimately joins one class or the other." In order to prevent a deterioration and the consequent status of feeble-mindedness, this child must receive treatment different from that given the entirely normal individual. The mentality, both functional and structural, must be determined by an analysis which will reveal the phases where special training is required by the child. This analysis is made by the use of well defined and carefully administered tests. Its main purpose, however, differs from that of Binet, in that the effort is not to procure a classification of children but to reveal to the teacher the places in which special treatment is necessary. The exact conditions of the experimenter's laboratory are unnecessary, since the difficulties in the working of the child's mind are too slight to be noticed by the laboratory methodology,—"the examiner, sitting casually with the child as if playing with him, makes a comparative determination as to which faculties are weak, without attempting the misleading accuracy of a percentage." On the basis of this comparative examination the necessary intensive training is prescribed.

The various faculties brought to light by such an analysis are classified as structural and expansive. To each faculty one chapter is devoted and the headings of the chapters are the following,—Attention; Memory; Sensation; Perception; Association; Abstraction; Imagination and Invention; Judgment and Reasoning; and Expression and Response. The majority of the captions are those of traditional psychology, except in the case of perception, which is defined as an "overworked word which we use to express our sense of intuitions, atmospheres, and all sorts of nebulous feelings." The chapters under these different heads contain not only a definition and a differentiation of the mental processes or faculties from all the others, but also a test and an interpretation of its results for any defect that may exist. Such interpretations are not the least valuable part of the book; for the practical workers, for whom the treatise is written, they are undoubtedly the most valuable. It is here, however, that we would offer a criticism. In our opinion the author presupposes on the part of her readers a psychological ability and insight which only one with the training that she herself has had, could possibly possess. Such a statement as this,— "As a matter of practical experiment, backward children can be brought up to a normal average in their lessons by half an hour's daily individual training," is rather misleading to the teacher who is likely to be responsible for these children. Had Mrs. Morgan been more specific in her statements as to the grade of those with whom she had to deal, *i. e.* as to the amount of difference between them and the normal child, one would be better able to appreciate the statement. As it is,

one may be fairly sure that the child which the teacher is likely to regard as backward, cannot make the progress indicated.

Throughout the book it is the individual, not the tests or their interpretation that is important. Commendation is due Mrs. Morgan, for she has emphasized the value of the clinical or individual method of dealing with children and has presented it to the teacher in a way that makes one see that, for the exceptional child, for the one who departs even slightly from the average or type, a special training or treatment must be devised.

DAVID MITCHELL.

NEWS AND COMMENT.

International Congresses to Meet.

The First International Congress for Experimental Phonetics will meet in Hamburg, Germany, April 19-22.

The International Congress of Neurology, Psychiatry, and Psychology, will be held this year in Berne, Switzerland, September 7-12.

The St. Louis Public Schools Establish a Psycho-educational Clinic.

Dr. J. E. Wallace Wallin, professor of clinical psychology and director of the psycho-educational clinic in the School of Education of the University of Pittsburgh since the winter of 1912, has just been appointed director of the psycho-educational clinic in the St. Louis public schools. The clinic will be organized at the beginning of the next school year, and will be located on the grounds of the Harris Teachers College, with which institution it will be closely affiliated. Lecture courses on abnormal children by the director will be offered in the extension division of the college.

The clinic will be organized as an independent bureau in the educational division of the schools, not as a minor division of the department of school hygiene or medical inspection, but in close cooperation with the latter department. Under the regulations of the superintendent's office the clinic will exercise administrative control over the examination, classification, education, placing, and transfer of the mentally exceptional children in the public schools. The actual supervision of the work in the special classes will be done by a special supervisor working under the direction of the clinic. St. Louis has already segregated about 500 pupils in special classes, and it is expected that the number will now rapidly be increased to at least 1000. Each child will be given a psychological, sociological, pedagogical, hereditary, and medical examination. The clinic aims to serve as an educational, social, and vocational clearing house for the community. The St. Louis authorities have carefully studied the situation and believe they have effected the best form of organization, linking the clinic on the one hand with the training school for teachers, and on the other hand, making it an integral part of the educational division, with supervisory control of the special classes.

Dr. Wallin will continue his work at the University of Pittsburgh until the end of the summer term.

The Psychological Clinic

Copyright, 1914, by Lightner Witmer, Editor.

VOL. VIII, No. 4.

JUNE 15, 1914

THE PROBLEM OF LIFE FROM A GIRL'S POINT OF VIEW.

BY MARGARET OTIS, PH.D.,

Resident Psychologist, State Home for Girls, Trenton, N. J.

Aline Herzog was a spoiled child and the pet of her father, an Austrian by birth. She was early a favorite with the boys and found she could obtain her every wish by coaxing either her father or the other men of her acquaintance. She went to school pretty regularly from the time she was six till she was fourteen years of age, and went as far as the graduating class in the grammar school. Her father was a good, industrious man and very indulgent to his children. He was especially fond of Aline and thought that nothing was too good for her. Unfortunately he died when she was sixteen, just at the time when the girl needed him the most, for the mother was weak morally and was easily influenced, either for good or evil. Aline afterwards said her mother was weak and let everyone influence her.

It was just after the father's death that the episode began that proved Aline's destruction. In fact, on the very night after the funeral she was sent by her mother to return a bag loaned by a neighbor. She knocked at the door and it was opened by the neighbor's husband. Aline said she felt drawn to him at that moment. Mrs. Burgess was kind to her and invited her to come again. She visited them often, played cards at the house, and was received in a friendly, neighborly way. Mrs. Burgess soon proved herself to be not the right sort of woman. She drank, smoked, and it is said she was also immoral. Aline, unconsciously at first, tried to make up to Mr. Burgess for his wife's failings,—would try to keep the house in order when Mrs. Burgess went 'on a spree'. The intimacy grew and Mr. Burgess yielded to a very natural love for the attractive young girl. He went too far and took her off to a hotel in New York where they lived together for a short time. Aline in speaking of this time says, "I was very happy then, or

thought I was." The happiness did not last, for the couple were arrested and Aline was consigned to the State Home. The man escaped through connivance of the police, and took up his residence in New York.

Aline's life in the Home was not a pleasant one. Used to indulgence, she did not take kindly to orders. She was unruly and impudent. After once working her way to the Honor Cottage she became involved in some wrong doing, refused to admit herself in the wrong, and was consigned to the department where unruly girls are subjected to more stringent rules than the others. Here she stayed for four years. She became despondent and ceased trying to improve. She chummed with the most immoral of the girls and it was never possible to trust her outside.

As Aline neared her twenty-first birthday when she must necessarily be released, an effort was made by some of her friends to open the way to establish her in life again, that the past might be forgotten. Her heart was touched and she was influenced to wish to lead a virtuous life. In fact, she expressed herself as willing to do all in her power to re-establish herself in the world. She was now ready to give up her former love, though for a long time she had cherished dreams of the happiness she had enjoyed. Her lover, Joe Burgess, had written occasional letters from time to time after Aline had first been consigned to the Home, but gradually his interest had died out. The fear on the part of her relatives was that she would return to Joe as soon as she was released. That fear proved groundless, yet to prevent any possibility of this occurring, a place was found for Aline at some distance from her former home, in the household of a woman of wealth where the girl could work her way and even go on with the training of her voice. For she had a good voice, and in the Home she had been given opportunity to develop it. It was thought that with such an incentive she would become ambitious for herself. All went well for a while. The housekeeper, Mrs. Stoneman, who had charge of the establishment in its owner's absence, seemed a good-natured, kindly personage and made things easy for Aline in every way. She was introduced to the young people of the neighborhood and had every privilege in the house that a girl could be granted. She was invited to sing at entertainments and was taken out to parties. Aline writes very happily of this period: "I have a very nice home and I can have anything I want. No one ever quarrels or fusses and no one nags at you. I feel sorry for the other girls at the Home. It's no use telling them to behave because I know how hard it is when some one always finds fault with you. I often wonder how I stood

those four years caged up like some wild beast. I couldn't help being ungracious sometimes. Why don't the people up here say those things about me? I wish you could hear some of the nice things they say. I am not telling you this out of conceit. I only want you to know that the people up here have an entirely different opinion of me. To them I am dear and sweet and nice." And this was true. Aline had made a very favorable impression upon the people of the place.

The first discordant note was sounded, however, when Aline began to make an equally favorable impression upon the boys of the town. In ten days she writes as follows: "You said I should make as many friends as I could. Did you mean only among my own sex? There are many nice boys that go to school here. I know some of them and I like them very much. Well, tonight one of the girls and I went walking. Not very far from the house we met this boy and we asked him to walk with us. When we returned a lady told me that Mrs. Stoneman had been looking for me. Well, I got a lecture. She told me that I was in her care and that I wasn't to go with any men. . . . I am through with her. I will do what she tells me to do but that is all. Will you write and tell me what to do?"

Mrs. Stoneman's point of view appeared shortly in a long letter as to Aline's character. She wrote as follows: "Three weeks have passed since Aline came to us. She is a splendid worker, is quick and thorough and seems interested enough to do her work well. *But* she has other qualities that seem to be irrepressible and that make her an undesirable person in the house. She completely loses her head over men and over boys even of fifteen years." Various details of Aline's misconduct were described in full, and her own treatment of the situation outlined. This was, in brief, to forbid absolutely any communication between Aline and the young men of the town. A letter sent to Aline with the intent to help her understand the world's point of view met with this response: "Conventionality! I can lead the respectable life but as to the conventional—well, I hate convention. Isn't it better to be the sweet, true, natural self? What does conventionality do? Doesn't it sometimes make life a lie? Sweetness and truth don't belong to convention. I don't know how you think but that is what I think and know. Convention and hypocrisy belong together. It has been proved. If all the world were against me I would stick to what I think is right. . . . If a wealthy society woman receives men into her house and has wrong intercourse with them the world hasn't anything to say against it. If a common, everyday girl speaks to men,

perhaps walks a little way with them, acts in a decent, respectable way the world condemns such a woman. Is that fair? Is that justice? What do you call that? . . . What is a hypocrite? Some people pretend to be so good, so perfect, and all that. Are they? Their minds might be polluted and their bodies too, but they are so perfect in hypocrisy that they deceive everybody. I am not pretending to be good, but I know that I have a wholesome mind and body. Do you understand me a little better now? or are things more complicated than they were before?"

Matters went from bad to worse. Mrs. Stoneman did not understand how to restrain Aline, and the girl rebelled under her attempts. To Mrs. Stoneman Aline seemed defective in self-control and destined to become a willing victim of prostitution, while Aline's view of her own attitude was far different. She says: "Of course I am fond of the boys. I like all men, but I don't like any of them enough to ever marry them or let anything serious happen. Why I am so fond of them no one understands. I only know that I can trust men. *You* said something about flirting one time. To be called a flirt, I have to be taught how to flirt first. That is an art I have never learned. Do you believe me? If I flirted I'd be less attractive."

Aline was told that she should do her best to please Mrs. Stoneman or that she could stay in that place no longer. She dreaded the poverty and bareness of her own home, so for a time she retracted from her defiant attitude and gave up her male acquaintances. She wrote very lovingly and tried honestly to improve herself. At the end of a letter was the following: "I am trying to study physics and I am getting to be quite friendly with the stars—astronomy, you know. I will be smart after a while. Don't you think so? Good-night. Love, love, love. Yours, Aline."

The good mood did not last long, for soon there came a letter from Mrs. Stoneman: "There have been developments in Aline's case the past week which make it impossible for her to stay here. As I told you she is defective in self-control, which means that she must be watched every minute. She is not to be trusted to look after herself. I am thinking of the time when Miss Rochester (the owner of the establishment) will take up the housekeeping as she will when I go away for a change and rest. She will be wholly unable to cope with the problem. I have seen enough of Aline to be quite certain that she will go into an immoral life as soon as she has control of herself. She might not if she were fifteen or sixteen years old, but she is too old and too far gone to do anything for herself." In another letter: "Aline was not restrained until she

persisted in doing the things that could not be done here. The school boy in question is only fifteen years old and was perfectly bewitched. It upset his school work. The principal of the school said to stop it for his sake. There was nothing else to do. Aline is like a child. She has only the one idea, that is, to be with the opposite sex. There are other instances with other young men. She embraced the school boy with kisses from which he tried to get away. The Irishman she let kiss her on the cheek. Yesterday Aline received a letter from 'Joe' which made her very happy. I wish that you would plan for Aline to go from here as soon as you receive this."

Another appeal to Aline helped the situation for a while. She wrote: "Mrs. Stoneman told me this morning that I was very good this week. She hasn't said anything to me about leaving, but if she tells you again that she wants me to go, of course I will have to. I have no wish to lead the old life. My tastes are entirely different. I am going home to visit sometimes, but that doesn't mean that I'll stay. If I did stay I wouldn't have to go back to Joe, would I? If he were a single man, perhaps I could care for him again, but as it is, I can't. It will be many, many years before I will ever love another man. I told you that I like the boys, and I do, but I couldn't take any of them nearer to my heart. I am set on becoming a singer and I won't have any peace until I begin my music lessons again. I never thought so much of my voice, but I do now, because I have made so many people happy with it. I sang for a few old ladies, an invalid, and different people that came to the house. Oh! they are all so pleased and it makes me very happy. I think every thing will be all right now. Mrs. Stoneman is very nice to me and she always treats me very kindly. She only has one fault. She seems to have an idea that women ought to have all rights and that women oughtn't to associate with men. She knows in her heart that I haven't done any wrong."

This assumed goodness did not last long, and finally Aline was sent away. She was soon to be twenty-one, showed no inclination to conform to conventional standards, and accordingly was allowed to go home. She showed by her attitude, however, that in her heart she was ashamed and chagrined at her failure. After going home she wrote back: "I am happy because I am making some one else happy." She wrote again: "I have seen Joe Burgess and talked to him. I can have him at my feet any moment—if I wanted him. But you and all the rest can set your minds perfectly at ease—I don't want him. Up in Tarrytown I had a nice time with the boys, in the right way, because they were innocent (at least the ones I

knew) and I was too, but down here—I laugh at all men. Did you know I've met the right one? Home, even though it isn't beautiful and as I am used to, is *home*. I would rather be unhappy here than unhappy among strangers. I am free here at any rate." In another letter she says: "The people connected in any way with the law always stoop to falsehood. I know it because I can prove it." Again: "I am just beginning to live. I love life now, and I am enjoying it too. It won't be a long life, and—so why not enjoy the little I have before me?"

This case may show nothing unusual, but a combination of certain traits of character and motives that make for an undesirable element in a community: hatred of poverty, love of luxury, love of freedom, desire to be admired by men, the feeling of being entitled to the best the world can give in the way of enjoyment; added to this the daily drill in vicious thought that is part of an institution life where girls of the lowest type are housed together; and a feeling of injustice,—of having been robbed by society of part of the young life that is the birthright of every one. What influence can overcome the effect of this combination of early lack of training and bad environment, together with four years of institution life which certainly did not prove to be uplifting?

Such was the unfortunate combination of circumstances that resulted in embittering and hardening a girl who had ability and intelligence which perhaps might have been saved to the world. To allow this ability and intelligence to be wasted, is false economy. Yet it can hardly be said that Aline was subjected to unreasonably cruel treatment either in the institution where she was confined or in the home where she was sent, for there she was welcomed and given every opportunity to rise if she had been able to profit by it. But the question arises,—what shall society do with a girl of this type? Can such a one be led to lead a reputable life? No institution in particular is in fault; the difficulty is more far-reaching. Blame should rather be attached to existing social prejudices and conventions. The fact that there is a prison reform movement sweeping over the country indicates that the public conscience is being awakened to a criticism of present methods of dealing with wayward natures.

The result in this particular case was that Aline found employment near her home, and wrote of accepting the attentions of a man whom she expected to marry. Later on she had changed her employment and seemed to have a number of admirers. She is working out her life problem in her own way. The final outcome,—who can tell?

A STUDY OF THE SCHOOL INQUIRY REPORT ON UNGRADED CLASSES.

BY ELIZABETH E. FARRELL,
Inspector of Ungraded Classes, New York City, N. Y.
(Concluded.)

WHAT IS DONE FOR THESE CHILDREN.

With regard to the school program, the course of study, and the place of manual training in the program, the School Inquiry Report says:

"The usual program is the three R's in the forenoon, and some form of handwork (manual training) in the afternoon. Nearly all of the experienced teachers and the principals are agreed that this bookwork is largely wasted upon these children; but they feel compelled to try to do this because it is the tradition of the system, and because the parents insist that their children shall be taught to read and write." (Page 5.)

"That appropriate manual training be made the principal thing in all of these classes; such reading, writing, and numbers as are taught should be taught, so far as possible, in connection with the hand work." (Page 23.)

As stated in the report the facts upon which the above statements are based are these:

"Most of the people who are familiar with the feeble-minded child as he is found in institutions and in the Hilfsschulen of Germany and the Special Classes of London believe that the children in the ungraded classes of our city belong to the latter group; that is to say, they believe that it is wrong to attempt to teach such children any of these matters (reading, writing, number)." (Page 5.)

"The experience with such children as these in institutions for feeble-minded, the country over, is that manual training is the one thing that they can be taught." (Page 6.)

"* * * that book work is practically useless for these children, and that our work with them, instead of being half manual, should be *all* manual and vocational." (Page 18.)

DISCUSSION.

It is a fact, though one not recognized in the report, that the child in the ungraded class has been the determining factor in the activities of his school life. It has been consistently held that the class must be small in order to secure opportunity for individual instruction. Not less, but more, must be given to the handicapped child. His opportunity is limited only by his own personality;—

reading, numbers, history, water color work, chair caning, dress-making, cooking, basketry, pottery making, are only a few of the means used to awaken dormant powers and latent interests. To enrich the experiences of the handicapped child will do for him exactly what it does for a more fortunate one. The degree of enrichment will be less, the kind identical. As the handicapped child is nearer and dearer to his sorrow-softened parent, so he is to the school and to the teacher whose joy it is to fan into flame the spark of interest, to build longer the span of voluntary attention, to develop to its uttermost his power of good discrimination.

The effort has been made to teach the higher type of backward child to read and to write. To attempt to teach these subjects to a child who is obviously defective would be evidence of bad judgment, but in what department of human effort may not bad judgment be found? The school principals and teachers followed established precedents in offering during the school day of ungraded class children, activities drawn from the different branches of human knowledge. In England the Education Act lays certain obligations on the local school authorities; in Germany the aim of the auxiliary schools (schools for backward children) is so clearly recognized that the subject matter of instruction must of necessity be broad, and in no sense narrowly special. The institution men of this country also recognize this fact. Quotations bearing precisely on this point follow:

"It (auxiliary school) aims to develop in its pupils a standard of conduct which shall not differ from that of a worthy and useful member of human society. To this end all those subjects of instruction should be introduced into the auxiliary school which tend to awaken and control the individual will and impulses to action. * * * Taking this, then, as our general aim, we can proceed to assign the scope of the several subjects:

- "1. Religion.
- "2. By practice and observation, speaking, reading, and writing, he should be helped to understand and reproduce orally and in writing whatever he has seen, heard, or experienced.
- "3. History.
- "4. Drawing.
- "5. Manual labor.
- "6. Singing and gymnastics.
- "7. Home geography.
- "8. Arithmetic.
- "9. Natural history and nature study."⁴

"The time table must provide—

- "a. Instruction in the elements of reading, writing, and arithmetic;
- "b. Singing and recitation;

⁴ Auxiliary Schools of Germany, page 84.

- "c. Object lessons;
- "d. Drawing;
- "e. Needle work for girls;
- "f. Physical exercises;
- "g. Manual instruction."⁶

"I do not believe it is wise for us to discard the literary training entirely, as we have in the institution a number of children of the higher types of mental feebleness and I believe these children are capable of being benefited by the literary exercises."⁷

"We endeavor to teach the salient points of the kindergarten, primary, intermediate, and grammar grades up to the sixth grade."⁸

"Our educational work is very elaborate and cannot be described in words. The annual report which I am enclosing gives the best résumé of the work we have ever printed."⁹

A report made after visiting the Massachusetts School for the Feeble-minded contains the following:—"At Waverley the whole morning was devoted to the teaching of reading, arithmetic, drawing and writing to the high grade mentally defective children."

From these quotations it will be seen that it is quite generally held that the child himself must determine what the school will do for him. Does it not seem likely that the point of view of institutional life would be such as would emphasize manual and vocational training? Children in an institution have their future clearly defined. They can be trained for one thing. With the great majority of ungraded class children in the public schools, it is not possible at this time to train for one and only one future, even if that seemed best. It is right here that the question arises,—is it manual training or motor training that these children need? If it is motor training then the author of the report must agree with our practice in giving the children physical training, rhythmic exercises, dancing, games, drawing, sense training, gardening, story telling, dramatization, and the many other activities which are motor in character. He must agree that the children need opportunity for gaining experiences of many kinds. "The time spent upon purely academic work has a value beyond its use to the child, and this is a point of view not recognized by those whose attention is focused upon children in institutions. By emphasizing the points of resemblance and minimizing the differences between the regular grade child and the ungraded class child, we foster the self-respect of the unfortunate one and sacrifice none of his opportunities for mental growth."

⁶ Elementary Education Acts, England, Defective and Epileptic Children.

⁷ George Mogridge, M.D., Iowa Institution for the Feeble-minded.

⁸ D. F. Weeks, M.D., Epileptic Colony, Skillman, New Jersey.

⁹ Walter E. Fernald, M.D., Mass. State School for the Feeble-minded.

In this section, perhaps more than in any other, is the reader cognizant of a lack of definiteness in the use of terms. We do not know what is meant by a feeble-minded child. We do not know whether he is always one and the same thing or whether there are infinite variations and differentiations demanding adaptations and modifications of educational treatment. It is impossible, therefore, to be specific in the discussion. The general theory and practice, here presented, would apply to any scheme of help for these children.

INCREASED APPROPRIATIONS.

The School Inquiry Report recommends increased appropriations in the following terms:—

“By greatly increasing the appropriations for the work in accordance with the needs, as determined by those in charge of the problem.” (Pages 21, 22.)

- A. “By the appointment of at least four associate inspectors of ungraded classes.” (Page 22.)
- B. “By the appointment at once of five more examiners (psychologists and physicians), whose duty it should be to determine what children shall be placed in these classes. Additional examiners should be appointed as needed. All repeaters and over-age pupils, together with all pupils now in any of the special classes C, D, E, and ungraded, should be tested by the Binet-Simon scale in the hands of experts trained in its use (as is done in Rochester, N. Y., Cleveland, O., and other places, with signal benefit to the system.” (Page 22.)
- C. “By the appointment of a number of special assistants—six or eight—whose business it should be to follow up the history of these defective children after they have passed through the schools. After a few years such histories would throw much-needed light on the value of the methods used; and they would point the way to further steps toward protecting society from the future incubus of these irresponsible persons.” (Page 22.)

DISCUSSION.

Since September, 1906, the Department of Ungraded Classes has increased approximately 1100 per cent. The expenditure for maintaining this department has not changed except for an increase in salary granted to the Inspector of Ungraded Classes. From 14 classes in 1906, the number has increased to 175 classes in September, 1913. No addition has been made during that time to the staff of medical examiners. The inadequacy of the machinery of administration, though presented by the City Superintendent of Schools at different times, has never had consideration.

It is impossible to say at this time how many associate inspectors of ungraded classes should be appointed. It seems reasonable,

however, when one considers the newness of this work in public education; the lack of trained teachers; the fact that we do not yet know just what constitutes mental defect in the so-called border line case, to grant at least the amount of supervision which is given to the much better understood problems in the regular grades of the elementary school. There could be no question about the wisdom of establishing a ratio of supervising officials to the number of ungraded classes, as has been established for assistants to principals in elementary schools.

Any adequate scheme for the care of mentally defective children must provide not only for their examination but for their re-examination at regular intervals. This fact was recognized by the Board of Education when the by-laws regulating ungraded classes were adopted (1906). This fact, with others which are obvious, makes it impossible to say how many examiners should be appointed. To arrive at such information might be possible by an intensive study of two or more school districts. Such a study would call for the examination of all over-age children, all delinquent children, all special class children. Whether the information so gathered would be indicative of conditions all over the city would, of course, be questionable. The value of such information, however, cannot be gainsaid in considering the number of official examiners needed to carry on the work for mentally defective children.

All that has been said above is applicable to the recommendation with regard to the appointment of "special assistants." The work done by Dr. Anne Moore in this particular field in the Department of Ungraded Classes, showed conclusively the necessity for some such activity. Here, again, nothing but investigation will show whether we need "six or eight," or sixty, or eighty special assistants.

Another item should be added as a reason for increased appropriations. This item is clerical assistance. Unless this is granted the maximum efficiency will not be possible even though a generous provision is made for special assistants, medical examiners, and associate inspectors. To oblige highly trained employees of the Board of Education to spend their days writing letters, sending out notices, etc., etc., is to pay a rather high price for such services. I earnestly recommend that this item be given careful consideration.

To say that four associate inspectors should be appointed is to treat as stationary a problem which is constantly growing. Because Dr. Goddard does not give a reason for his recommendation, argument is impossible. Again we deplore an investigation conducted without knowledge of documentary material.

RECORDS.

The following quotations from the School Inquiry Report relate to records:—

“The only way to solve this problem (three R's) is to appeal to experience. Had a careful record been kept of every child who had been in the ungraded classes; his actual condition; what he had learned in the way of reading, writing, and counting; and then of his after history, and the extent to which he had been able to make a living because of his ability to use his knowledge of the three R's, we might, by this time, have an answer to the question. As a matter of fact, no such records have been kept.” (Pages 5, 6.)

“Actual data should be accumulated as to what becomes of these children after they have left the ungraded classes, of the children in E classes, the C classes, and all others who show in their school work that they are not perfectly normal, to the end that we may know what effect our methods are having upon these children, and to what extent we have wisely judged them and treated them.” (Pages 15, 16.)

The above statements seem to be based upon the fact that,—

“We have continually *asked* teachers * * *.” (Page 6.)

DISCUSSION (RECORDS).

To substantiate in fact the statement that “no such records have been kept,” it is again necessary to study the report for evidences of the use made of official material,—minutes of the Board of Superintendents, annual reports of the City Superintendent of Schools, records in the office of the City Superintendent of Schools,—and to search for indications that a critical study of methods of work, budget requests, etc., etc., had been made. There are no such evidences or indications.

Such a study of the minutes of the Board of Superintendents would have brought out the fact that a record blank for use in ungraded classes had been adopted in 1906. If this discovery was followed up by a study of the records on file in the office of the City Superintendent it would have shown that four times each year each child in an ungraded class is rated. On this approved blank information is given as to “his actual conditions; what he had learned in the way of reading, writing, and counting.” In addition to the facts noted, the official records give information as to the condition at the time of discharge, at whose request he is discharged, for whom he is to work, and a prognosis as to his probable ability to succeed.

A study of the annual reports of the City Superintendent of Schools would have shown the attitude of the school authorities on

the "after care" of children who left the ungraded class at sixteen years (none younger may leave) to enter industry. The City Superintendent of Schools recommended in 1909-10 "that social workers be appointed to visit the homes and work with the parents of mentally defective children."¹⁹

A study of documentary material in the office of the City Superintendent of Schools would reveal the work in "after care" done under the auspices of the school authorities, and at their request by the College Settlement and the Public Education Association, whose investigator, Dr. Anne Moore, followed up the industrial career of all children who had left the ungraded classes up to the time her investigation was finished in June, 1911. Had such a study been made it would have been apparent that the school authorities not only appreciated the value of such material but actually inaugurated and established on a working basis the first, and to this time the only, official after care of mentally defective children done in connection with American public schools. This was begun and has been continued since 1907, when the Department of Ungraded Classes was one year old.

The report says we must gather data as to what becomes of the 22,387 E class children; 2691 C class children; 2041 D class children; and the 15,000 children said to be feeble-minded. The industrial career of these individuals is the point here. The implications in this suggestion are tremendous. The German system of registering at the police station all people sojourning in the country is a way to learn about the 42,119 individuals under discussion. This, however, does not seem feasible just now.

Since,—"We have continually *asked* teachers" is the only fact presented as the basis of the statement that "no such records have been kept," and since the method of recording the data relating to ungraded class children and the character of such data were not the material of critical study, this section of the School Inquiry Report does not appear to be conclusive.

The Report re-states conditions that have been put forward by the City Superintendent time and again,—children not examined, inadequate supply of trained teachers, inadequacy of the examining and supervisory staff, etc. etc. To bring these forward once more with all the prestige of the School Inquiry Committee will undoubtedly be of value.

The report seems to have viewed the ungraded class problem as the work of a day,—a work without a past and with no future. It

¹⁹Thirteenth Annual Report, City Superintendent of Schools, page 149.

deals with conditions found at a given time with no consideration of the circumstances which brought them about and those which were in process of correcting them. Educational administration is not static, as one might gather from the report. Unless we discount this static quality we will fail to get the good intended. The force which has driven this particular problem since 1906 is dynamic. It has increasingly gathered momentum and is projected in a long vista ahead. These conditions, or some other condition equally undesirable, may exist five years from today. The thing which makes them significant is our attitude towards them.

Throughout the report the terms "mentally defective" and "feeble-minded" are used interchangeably. With this usage in mind, the question of "mistaken diagnosis" referred to on page 5 is to be considered. There is no better way to show the inaccuracy implied in this section than to place in juxtaposition the statement of one of Dr. Goddard's colleagues in psychology: "Feeble-mindedness in its correct usage, characterizes the individual whose mental development is retarded. It has no reference whatever to the matter of whether the condition is curable or permanent. Its literal meaning excludes all reference to causes and a child might be feeble-minded at first and become normal later." "A child might progress at a retarded rate at first and then improve with the removal of some physical handicap or other cause."¹⁰

Those who looked to the School Inquiry Investigation as the logical means of solving the problems now troubling school administrators in the field of special education, will study the report in vain for a philosophy upon which to found their practice. They find, instead of the broad vision of the function of the school in this its latest problem, a series of doses prescribed for present ills; a dearth of positive knowledge which it would be reasonable for Dr. Goddard to have provided, throws the atmosphere of opinion around the remarks made on organization, examination, "mistaken diagnosis," number of feeble-minded children, and vocationalized manual training,—to enumerate only a few items.

The service given by Rousseau to general education, by Pestalozzi to the education of poor children, by Horace Mann to public education in the United States, is similar to that expected from Dr. Goddard for the education of mentally defective children when he was employed by the School Inquiry Committee to investigate the aim, methods, and results of ungraded class work. To be unable to see the forest for the trees is sad. To have missed the vision is sadder still.

¹⁰ *Journal of Psycho-Asthenics*—Vol. XVII, No. 4.

THE FURTHER HISTORY OF SOME TROUBLESOME BOYS.

By HORACE RICHARDS BARNES, M.A.,
Harrison Fellow in Economics, University of Pennsylvania.

This is the first attempt to follow up, after a lapse of years, the work done for a group of children by the Psychological Clinic of the University of Pennsylvania. During the summer session of 1910, a class for troublesome adolescent boys was conducted for six weeks by the Psychological Laboratory and Clinic. Dr. Arthur Holmes, who organized the class under the direction of Professor Lightner Witmer, reported upon the summer's work in an article in **THE PSYCHOLOGICAL CLINIC**, for November 15, 1910.¹ With regard to the make-up of the class Dr. Holmes said:

"It was found in examinations made at the Psychological Clinic preliminary to the entrance of the boys into the class, that six were moral delinquents, having stolen from their homes or other places. Of these one had been arrested and two were in the charge of probation officers of the Juvenile Court. Of the other seven, one was normal, two were backward and morally delinquent, and four were merely backward in their school work. In every case there was some reason which made the parents anxious to have their boys put under special training, the only exception being one normal boy, who accompanied his brother for the sake of companionship."

At the suggestion of Professor Witmer, the writer, while a student of psychology at the University during the winter of 1913-14, undertook to follow up these boys who had attended the special class in the summer of 1910. The work involved the writing of a number of letters, and the making of a great many visits to schools, homes, offices, factories, and other places of employment. It was impossible to see personally four of the boys who were no longer in this locality. However, some indirect information was gathered concerning the recent behavior of these four. They were D., listed as case 210; C., case 251; G., case 68, and N., case 94.

The boys C. and D. came from a suburban home and D. was the only one of the two brothers who had been backward in school. C. was a normal boy eleven years of age, and naturally enough the report of Mr. Cameron, the teacher in charge, was, "His work was the best in the class." D., twelve years of age, was brought for "moral

¹ Holmes, Arthur. *An Educational Experiment with Troublesome Adolescent Boys.* **THE PSYCHOLOGICAL CLINIC**, Vol. IV, No. 6, November 15, 1910, page 155.

delinquency." He had attended several public and private schools, and at the time of his first examination he was somewhat behind in his school work. Although almost thirteen years of age he was only in the fifth grade. Report of his work at the end of the summer class was that he had made the greatest mental progress of all the boys in the class, and that he had learned to control himself. The teacher in charge reported that he thought there was nothing unusual about the boy.

In our efforts to follow up the life led by these brothers in the past four years we have been unable to elicit any response to our letters, from either the family or the private school which the boys are now attending. We have learned through Dr. Francis N. Maxfield, Assistant Director of the Psychological Clinic, who is acquainted with one of the teachers of the boys, that they are doing well and causing no trouble. This confirms our diagnosis that there was nothing unusual about them. Their actions during the period when one of them was being brought to Clinic for examination were similar to the actions of many boys who lack firm parental control. They were typical of many children who are properly termed "spoiled." Upon the advice of the Clinic the boys had their adenoids removed and apparently were much improved after the operation.

G., case 68, when thirteen years of age, was brought to the Clinic on account of "moral delinquency." The summary of Mr. Cameron's report concerning the work done by G. states that "he made decided improvement in his conduct during the term of six weeks. In the swimming pool and the gymnasium, and on the baseball field he acquitted himself well. He has good stuff in him, and I have no doubt will make a good record for himself." In an effort to locate the family I learned from the department store where the father had formerly been employed that the family had moved to Pittsburgh about eighteen months ago.

N., case 94, was brought to the Clinic by his mother because of backwardness. He was eleven years of age and according to Mr. Cameron was far below other boys in the class in all his work. He made the greatest improvement in arithmetic and reading. He was one of the best boys in the school, and though he occasionally showed his temper, was soon set to rights by a few words of caution. A number of visits were made to schools, to the home neighborhood, and to places of business in the following up of this case. Finally I learned from a former neighbor that the family have bought a ten-acre place in New Jersey. The land is not cleared, and after leaving they expect to go to truck farming. The neighbor informed me that N.'s mother was a hard working woman, and that the boy

himself had been doing very well in the past two or three years, but that the father had not worked fourteen weeks during the fourteen years that she, the neighbor, had known the family. I learned also from her, that N. had been employed in a business office in Philadelphia. Upon inquiring at this office I was told that N. had been engaged as a general office boy at four dollars a week, and had done very well. He left in December, 1913, on his own initiative, stating that he was going to New Jersey.

More definite information was gathered about the remaining nine cases out of the thirteen who had attended the summer session.

L., case 150, was brought to the Clinic when he was thirteen years of age because of backwardness in school, and because of bad conduct. He was found to be in poor physical condition, especially having trouble with his ears. From a number of calls made at his home and places of employment, I have learned that L. has attended school for only a few months since the summer of 1910, and was unable to accomplish anything in school. He has held several jobs, but has not stuck to any. His conduct has led to his being discharged by some of his employers. He comes from a very comfortable home, but his parents apparently do not know how to manage the boy.

K., case 184, twelve years of age in 1910, was brought to the Clinic for general bad conduct,—lying, playing truant, etc. His school marks were satisfactory, but his teacher could not manage him. At the date of my visit to his home, February 25, 1914, K. was fifteen years of age, measuring six feet seven inches in height. The Clinic had previously advised that the boy be handled with patience and tact. He has good home conditions, and apparently there is no cause for alarm about this boy. He is too large to get a boy's job and is too young and undeveloped to hold a man's position. He has had considerable trouble with running ears. It is my belief that when he gets stronger physically he will be able to hold his own in the world.

F., case 145, was twelve years of age when brought to the Clinic because of backwardness in school. Mr. Cameron's report was that "he had not enough of force to make great progress in anything. He is easily led."

F. is now sixteen and is in the seventh grade, being therefore considered backward, but apparently the only thing that keeps him back is his difficulty in arithmetic. He lives in a pleasant, neat home, is a strong, intelligent looking boy, and is anxious to get to work. There are no other abnormalities in the family. The only reason that I can discover for this boy being held back in school is

his failure to come up to the standard set for passing in arithmetic. I believe he will be able to get along in the world and hold his own.

E., case 153, was brought to the Clinic when thirteen years of age because of backwardness and general bad conduct such, as stealing and begging. Dr. Holmes said of him that he would probably land in an institution. This prognosis has been verified, for E. has since caused a great deal of trouble, and for one year, June 1911-1912, was in a protectory. On November 20, 1913, Dr. Maxfield after examining E., and after thoroughly looking into his actions during the past three years, advised placing the boy in the Eastern Pennsylvania State Institution for Feeble-minded and Epileptic at Spring City. Two other children in the family have also been troublesome and have been in the House of Refuge and the Rahway Reformatory. The home is a pleasant, cheerful one, but there is a family history of incorrigibility, and after taking into consideration all the facts in the case, the diagnosis of the Clinic, that the boy should be in an institution, is confirmed.

A., case 239, when thirteen years of age was brought to the Clinic because of "moral delinquency." There are no abnormalities in the mother's or father's family. The mother is a coarse woman, and the father is a drunkard who seldom provides for his large family. They live in a poor home in a congested neighborhood. Upon the recommendation of the Clinic during the summer of 1910 treatment was given A. for his eyes and ears and he obtained glasses. He has since been earning a living in various mills in the city at wages varying from four to eight dollars a week.

J., case 248, when thirteen years of age was brought to the Clinic by his sister for truancy. The boy's mother is dead and he had been causing his aunt, who was keeping house for his father, considerable trouble. Mr. Cameron's summary of J.'s work states that he was the most unsatisfactory boy in the class, and that he was constantly causing disturbances among the other boys. His work and conduct, however, improved a great deal during the last two weeks of the session. J.'s recent history shows him to be doing very well. His aunt reports that he no longer gives her trouble, and she believes a great deal of her former lack of control over the boy was due to her ignorance of the way to handle him. He attended school until June, 1913, and was in the 8A grade at this time. He left to learn the plumbing trade. During the winter he has been sticking to his job and also has been regularly attending the night school classes of the Philadelphia Trade School. As far as we are able to learn he is leading the life of a normal boy.

H., case 259, was brought to the Clinic by his mother, who had

read about the special class in the newspapers and who wished to enter her son, then thirteen years of age, on account of his backwardness. Mr. Cameron reports that at "first H. was addicted to yelling out loud in school when on occasion a boy touched him. This habit left him entirely and he worked well in his studies. He was what we sometimes call a 'touchy boy'. In the gymnasium his coordination was poor and he did not make much improvement in his general work." In following up this boy I found that he has been working for about a year in an automobile shop for four dollars a week. On March 1, 1914, his salary was raised to five dollars a week. The foreman of the shop told me that the boy's work was satisfactory and H. himself said that he was satisfied with his job and expected to stick to it. His general appearance is that of a normal boy, and there seems to be no reason from the family history and from H.'s recent behavior to doubt his ability to fit into society.

B., case 250, was brought to the Clinic when eleven years of age by the Juvenile Aid Society because of "moral delinquency." Mr. Cameron's report states, "B.'s greatest difficulty was learning to speak only when called on; by the end of the term he had become pretty well the master of himself. He did good work in his studies, but was nervous in his seat,—perhaps because the chair was too uncomfortable for him. He did very well in his general work and learned to swim fairly well in the pool." B.'s father is a tailor and seems to be doing very well. The boy continued school until he reached the eighth grade, when he went to work in a department store. He left this place after a few days because he did not like working in the cellar. He is now doing satisfactory work in a printing shop. B. is anxious to go to a farm school, but his father informed me that the farm school will not take the boy until he is sixteen years of age. During the past two months B. has been attending a session of the public night school.

M., case 256, when fifteen years of age was brought to the Clinic on account of backwardness. He comes from a very good home, and his family are much interested in the case. Conversation with the boy and general observation lead me to suspect that he is of a lower type mentally than any of the other boys in his class whom I have seen. Mr. Cameron's report, however, states that he studied well and made good progress; his conduct was good and he was always willing to do anything asked. His school records during the time he attended school since leaving here showed that when he left in June, 1912, he was in the 4A grade, although he was then seventeen years of age. He has been working for almost a year with a manufacturing company in the city. A talk with the foreman of

M.'s division revealed the fact that the boy was getting along very well and though a little slow seemed to understand what was expected of him. He has been receiving six dollars a week wages.

A study of these thirteen cases raises a number of questions. Nearly all of these boys were brought to the Psychological Clinic for mental diagnosis, because of their incorrigibility. In other words, their actions especially marked them, and these actions, which may have been chronic or spasmodic, did not conform to the standard set as normal by society. Are such tendencies as were displayed by these boys,—and they represent a very small proportion of a large group which is offering a big and important problem,—atavistic? Have we all inherited similar tendencies, which we have learned to suppress because of the influence of environment upon us, or are such tendencies given only to a portion of the race? It is my belief that we all have these tendencies working in us, but owing to the influence of training and environment they have become regulated to our social life. Because of the advantage of years and changes of custom, because of suppression, because of lack of use, these criminalistic tendencies no longer play the role in the daily life of man that they did in the early ages when man for his self-preservation had to secure his livelihood regardless of the consequence to his fellow-man. An examination of these thirteen cases leaves no doubt that the influences of the three great forces of life,—heredity, environment and training, have some part to play in each case. There seems to be evidence to warrant our laying emphasis on the lack of wholesome environment and on the lack of careful training in the majority of these cases. Few of the family histories show abnormalities, and if these are accurate statements, we would infer that it was because of lack of parental control,—either because the parents were both out working during the day, or because parents did not understand their children,—that the boys acted as they did, and led society to suspect that they were likely to become dangerous citizens.

In many of the cases as a result of the examination at the Psychological Clinic the boys were taken to various medical dispensaries, and physical benefits were derived by following out recommendations involving the removal of adenoids, ear treatment, securing of eye glasses, etc., etc. These procedures brought about an improvement in the general condition of the boy and also in his mental work. This leads to the conclusion that the physical condition of the boy plays an important role in his conduct. Another factor that must be taken into consideration was the attitude of the boy toward his public school, and of the public school

toward the boy. Every case improved during the six weeks of the special class and at the end of three and a half years the parents of these boys are unanimous in their decision that their sons were helped by the Summer School. This leads me to conclude that in several cases if not in all, the public schools missed an opportunity to aid in solving the problem.

The recent interest in child welfare, which is leading to a reorganization of our school system, to measures to improve and keep intact the home, and in other ways to give every child a fair chance for normal development, will no doubt aid us greatly in solving the problem of the boy who because of his behavior is called "incurable". In conclusion, I wish to emphasize the value of a diagnosis in every case. The present methods of keeping our clinical records include giving a diagnosis along with the other important information about the case. This was not done in some of our older records, and nearly all of these cases lack a definite diagnosis as to mental condition. It is always wise to make the diagnosis, even although it be a tentative one, so that we can use it for comparison when we take into consideration the future progress of the individual.

THE PSYCHOLOGY OF IT.

BY CHARLES KEEN TAYLOR, M.A.

Philadelphia, Pa.

If there is one point upon which most of us agree, it is the statement that the *morale* of our American young people is not what it should or could be; and moral education "conferences," lecturers, educators, physicians, and social workers almost unitedly tell us that the grand and only remedy is instruction in sex hygiene. All agree that the home is the best place for this instruction, but that the home is not giving it, that many homes are incapable of so doing, and therefore the school should do it—yes, down to the first grade.

It is likely that all these well-intentioned folk are making a profound mistake, and for many children perhaps a most unfortunate one. The mistake consists in believing in the fatal delusion that moral reform can be encouraged by teaching "facts," and that by means of a mere knowledge of anatomy and special hygiene a child's character can be made and kept clean, strong, and uncontaminated.

Let it be said at once that the immorality found in varying degrees among young people and children is not nearly so much caused by a lack of knowledge, as by a lack of a strong moral stamina, a fundamental power of resistance, which would enable the possessor to stand firm against the common temptations. Along with the lack of moral strength there is another cause making for the downfall of many. Even before adolescence, and particularly during that critical stage, many influences, in the home and without it, tend to develop in the children a precocious sex interest and a leaning toward sensuality. In other words, from early childhood for a great number of children, and especially those in well-to-do homes, there is a long series of influences, each one of which has probably little effect, but the cumulative strength of which is exceedingly great. Let us consider a number of these influences.

The first to come are generally those developed by ill-chosen games. Properly planned play is of immense value in the mental, moral, and physical development of a child. The only games likely to be ultimately bad in their effects are those founded on sex interest and difference, such as the so-called kissing games, which in themselves, as played by young children, mean very little. Parents often watch such games and exclaim over the "pretty sight." No

doubt the children are innocent as can be, but even then these games have a distinct psychic effect in starting a sex interest and in encouraging familiarity. Again, parents frequently aid in the precocious sex interest by pairing off the boys and girls at children's parties, just as adults are paired off, and again it is doubtless a "pretty sight" to see the couples of miniature men and women, aping the manners of grown-up men and women. The distinctions are often emphasized by more or less teasing concerning "sweethearts," "beaux" and the like. It may seem silly and hypersensitive to recognize any psychic effect in such matters, or even in the direct teasing of young children concerning their "beaux" and "best girls." But again let it be said that while *in themselves* such influences might mean little, every impression and suggestion goes to the making of character, and it is the *cumulative* effect which concerns us.

When children are from five to eleven years old comes dancing. With people of moderate means this period is likely to be put off a few years, but the well-to-do support thousands of semi-fashionable dancing schools for children of this age and older—all under the pleasing idea that dancing will give them grace and poise. Perhaps it will, but it frequently brings less desirable gifts also. Be it understood,—the best authorities give dancing a high rank as a cultural and moral factor of great value. But the great value is in the "open" dance, including many beautiful folk dances the practicing of which would be most valuable for children. But outside of some progressive public schools such dances are not common. Instead, in the vast majority of dancing schools, we see matters conducted as among men and women, the children acting like adults as nearly as possible and being treated as such. Would we not rather see children acting like children and being treated like children? It is most unpleasant to see youngsters of twelve, thirteen, or fourteen years posturing and acting with the blasé assurance of sophisticated and weary adults,—to say nothing of the effect of the common "round dance" and particularly its later variations. As exercise these movements have little appeal, the main interest being a sensual one built upon sex instinct and interest, and early adolescence is distinctly not the time for stimulating such instincts and interest. The physical contact and its accompanying familiarity is the basic fault of these dances, and the harm they have done even among young children is far greater than is supposed by admiring parents and chaperons who look on approvingly in groups around the walls. True it is that the children are very often quite innocent of wrong thought, though they often are not. Even if a

wrong idea or impulse never enters their minds, there is nevertheless a strong sex stimulation, which adds greatly to the cumulative effect we are studying. Sex stimulation has its proper and necessary place and time, but it is the wrong time for it when, in the bewilderment of early adolescence, children find themselves possessed of a whole new world of instincts and feelings of great power, over which control has not yet been gained, and concerning which little useful knowledge has been acquired.

At this very critical time other malign influences make themselves felt. For instance, there are the moving pictures to which all of us swarm by the hundred thousand. The moving picture is doubtless one of the most important educational methods discovered in a century, as well as the bringer of much clean enjoyment to young and old. On the other hand, what is the most common type of picture, leaving out those openly obscene or suggestive? Is it not the so-called "love drama"? Usually these are very clean and decent, though too often they are the reverse. But even if entirely clean and proper, what is their effect upon children? It is not difficult to say. The result is an increasing of sex instinct and feeling, and though the effect upon adults might be negligible or even good, upon the adolescent child the cumulative effect of even the best pictures is far stronger than we usually imagine, and as for the effect of suggestive pictures—it is no wonder that young folk in their 'teens leave such exhibitions with resistance diminished and with their minds in a psychic whirl of sex-consciousness. And we have not yet taken into account the effect of seeing, day after day, a common portrayal of what should be an almost sacred mystery. The sacredness and mystery are destroyed and imitation becomes an easy step.

Allied to the moving-picture influence is that of the commoner type of vaudeville, where may be seen dancing and costumes of an entirely sensual appeal, and where suggestive jokes and songs are the rule rather than the exception. Children go in swarms to the vaudeville. The vaudeville and the theater—the latter through its recent open attempt to commercialize the present abnormal interest in sex questions, have much to answer for.

Another unfortunate influence is that of that kind of newspaper which publishes every nasty detail of every possible scandal—and children have a great way of reading such articles. Then there is a type of paper which on one page prints woeful editorials concerning the poor downtrodden workingman, and on the very next prints quack advertisements of a disgusting nature, which are often traps for the sons of those very workingmen. Many journals

realize their responsibility as educational factors in their communities, and there are many whose names would be recognized from one end of the country to the other as strong influences for good. Unfortunately, all are not of that type.

Other influences might be mentioned, such as the suggestive jokes and pictures so abundant in some of our comic weeklies and Sunday supplements, in which the commonest subject is marital infidelity or strife. Children cannot respect relations which are continually held up to ridicule. Yet another decided influence is the fashion of dressing our young girls, who sometimes might be fourteen, twenty-four, or even forty, as far as could be told from a distance of a hundred yards. The present bad taste in dress is at once the result of an excessive sex-feeling and a partial cause of it.

This is an incomplete but amply sufficient list of many influences which, beginning in early childhood, have a final powerful cumulative effect which makes for a leaning toward sensuality and a precocious sex-interest,—two forces that have much to do with the genesis of the great modern wave of immorality. Acting with these is that other great cause,—a lack of moral strength sufficient to resist and overcome the temptations which our children must meet with every day of their lives.

Where is the responsibility? In your heart of hearts, if you are a parent, it is just possible that you may know where the greater part of the responsibility lies.

NEWS AND COMMENT.

Psychology and Medicine Basis of National Children's Bureau.

An amendment has been offered to the "Legislative Bill" (H. R. 15,279), as reported to the Senate May 15, 1914; on page 147, under Children's Bureau, in line 3, after the figures, "\$25,640," to insert the following words:

"Provided that the chief and assistant chief shall be experts in child study, and provided further, that the supervisory officers and all other persons now or hereafter employed in the bureau, in investigations of infant mortality, diseases of children and similar subjects of a medical nature, shall have had a medical training."

Such an amendment will tend to aid the work of the Bureau in many ways, of which the following might be mentioned:

1. It will help toward general efficiency in the work.
2. It will make it easier to keep incompetent persons from entering the service of the Bureau.
3. Most important of all, it will cause the Bureau to take up some of its fundamental work first: that is the study of *children*, as well as of their environment.
4. It will avoid duplicating the work of other Bureaus by doing this fundamental work, and thus overcome a most serious objection which has been made against the Bureau.
5. The idea of such an amendment may suggest similar amendments for other Bureaus when needed, and thus help departmental service in general.

As this is a new and most important Bureau and as the study of children is comparatively recent, it is all the more necessary to guard against incompetent personnel.

The staff of the Children's Bureau consists of a chief, one assistant chief, one statistical expert, and eleven subordinate employees.

The chief is a woman fifty-six years of age and unmarried. She is a college graduate and has been interested in various reform movements, has made special study of the care of the insane, and has spent much time in Hull House at Chicago. She is an estimable woman, much interested in humanitarian work.

The assistant chief is a college graduate, and under the supervision of a statistical expert was joint author with him of statistics of paupers in almshouses and of the insane and feeble-minded in institutions (published by the Census Office).

The statistical expert is a woman, thirty-eight years of age and unmarried, a college graduate, and a Doctor of Philosophy. She was special investigator for equal suffrage in Colorado; and also made a report for the Labor Bureau on women and children in industry.

There is little to indicate that the chief of the Bureau has had any definite training for the study of children. Her work seems to have been almost wholly

sociological and mainly with young people and adults. Whatever the qualifications of the chief, it is generally assumed that the assistant chief should know all about the subject. But it does not appear that he has had the least preliminary training and experience in child study. With the statistical expert as with the chief, her training and work have been not only sociological, but also related almost wholly to adults and not to children.

When the Bureau was formed (mostly by transfer from other Bureaus), the question as to whether the candidates *knew* anything about children appears not to have been asked, and the staff can hardly be blamed for taking their positions. Perhaps no one is to be criticised for the condition of this Bureau. The idea seemed to be, that anyone could take statistics about children and *interpret* them. The study of children themselves, their psychology and their physical nature, that is child study, which is the foundation work of any children's bureau, seems to have been ignored.

Child study is the essential scientific work of the Bureau, while getting statistics about children is more of a sociological nature. *But scientific knowledge of the child is fundamental and is necessary for competent sociological work on children. To know what facts are important about children in any relation; and after these facts are collected, to arrange, classify, and interpret them, cannot be done properly and adequately by anyone who has not had training and experience in the scientific study of children.*

It will be noted in the second proviso of the amendment, that medical training is required, not necessarily the degree of M.D. so that those trained in any of the different schools will be eligible. In the absence of the M.D. requirement it will be somewhat difficult to say just what shall be understood as "medical training". This term, as well as the equally vague "expert in child study" might have been defined by the amendment under consideration.

A Teachers College for the South.

George Peabody College, Nashville, Tenn., successor of the Peabody Normal School, will open its doors to students on June 25, 1914, at the beginning of the summer session. Peabody Normal School closed in June, 1911; and since that time the trustees have increased the assets, erected new buildings, and provided new equipment. This is the first teachers college to be established in the South, where there has long been a demand for such an institution. The training offered will be of a more practical nature than that given in similar colleges in the North, and special attention will be paid to vocational and industrial education.

Directory of American Psychological Periodicals.

(Revised to June 1, 1914.)

American Journal of Psychology—Worcester, Mass.: Florence Chandler.
Subscription \$5. 600 pages annually. Edited by G. Stanley Hall.
Quarterly. General and experimental psychology. Founded 1887.

Pedagogical Seminary—Worcester, Mass.: Florence Chandler.
Subscription \$5. 575 pages annually. Edited by G. Stanley Hall.
Quarterly. Pedagogy and educational psychology. Founded 1891.

Psychological Review—Princeton, N. J.: Psychological Review Company.
Subscription (with Psychological Bulletin) \$5. 480 pages annually.
Bi-monthly. General. Founded 1894. Edited by John B. Watson.

Psychological Bulletin—Princeton, N. J.: Psychological Review Company.
Subscription \$2.75. 480 pages annually. Psychological literature.
Monthly. Founded 1904. Edited by Shepherd Ivory Franz.

Psychological Monographs—Princeton, N. J.: Psychological Review Co.
Subscription \$4. 500 pp. per vol. Founded 1895. Ed. by James R. Angell.
Published without fixed dates, each issue one or more researches.

Psychological Index—Princeton, N. J.: Psychological Review Company.
Subscription \$1. 200 pp. Founded 1895. Edited by Howard C. Warren.
An annual bibliography of psychological literature.

Journal of Philosophy, Psychology and Scientific Methods—New York:
Science Press. Bi-weekly. 728 pages per volume. Founded 1904.
Subscription \$3. Edited by F. J. E. Woodbridge and Wendell T. Bush.

Archives of Psychology—Substation 84, N. Y.: Archives of Psychology.
Subscription \$5. 600 pp. ann. Founded 1906. Ed. by R. S. Woodworth.
Published without fixed dates, each number a single experimental study.

Journal of Abnormal Psychology—Boston: Richard G. Badger.
Subscription \$4. 480 pages annually. Edited by Morton Prince.
Bi-monthly. Founded 1906. Entire field of abnormal psychology.

Psychological Clinic—Philadelphia: Psychological Clinic Press.
Subscription \$1.50. 280 pages annually. Edited by Lightner Witmer.
Monthly (9 numbers). Orthogenics, psychology, hygiene. Founded 1907.

Training School Bulletin—Vineland, N. J.: The Training School.
Subscription \$1. 160 pp. ann. Ed. by E. R. Johnstone. Founded 1904.
Monthly (10 numbers). Psychology and training of defectives.

Journal of Religious Psychology—Worcester, Mass.: Louis N. Wilson.
Subscription \$3. 480 pages annually. Founded 1904.
Quarterly. Edited by G. Stanley Hall.

Journal of Race Development—Worcester, Mass.: Louis N. Wilson.
Subscription \$2. 460 pages annually. Founded 1910.
Quarterly. Edited by George H. Blakeslee and G. Stanley Hall.

Journal of Educational Psychology—Baltimore: Warwick & York.
Subscription \$2.50. 600 pages annually. Founded 1910.
Monthly (10 numbers). Managing Editor, J. Carleton Bell.
(Educational Psychology Monographs. Edited by Guy M. Whipple.
Published separately at varying prices. Same publishers.)

Journal of Animal Behavior—Cambridge, Mass.: Emerson Hall.
Subscription \$3, foreign \$3.50. 450 pp. annually. Founded 1911.
Bi-monthly. Robert M. Yerkes, Managing Editor.

The Behavior Monographs—Cambridge, Mass.: Emerson Hall.
Subscription \$3. 450 pages per volume. Edited by John B. Watson.
Published without fixed dates, each number a single research.

The Psychological Clinic

Copyright, 1914, by Lightner Witmer, Editor.

VOL. VIII, No. 5.

OCTOBER 15, 1914

THE HYGIENE OF EUGENIC GENERATION.¹

BY J. E. WALLACE WALLIN, PH.D.,

Director Psycho-educational Clinic, St. Louis Public Schools.

Eugenic or generative hygiene is preventive individual and race hygiene raised to the *n*th power. No measures for individual or collective betterment are more fundamental than the hygiene of generation. To be well born is the fundamental prerequisite of being well bred. Generative hygiene contemplates not only the regulation of the function of mating, but also the establishment of those conditions which will insure normal healthy generative processes in the father and mother. In addition to the requirement of eugenic marriages, it is also necessary to safeguard the health and development of the foetus. Moreover, since the prenatal and postnatal child are one and the same indivisible person, we should not draw the line of cleavage too sharply between the eugenical and euthenical factors of development. An attempt to draw a sharp eugenic line between, on the one hand, the hereditary prenatal factors, and on the other hand, the environmental prenatal (congenital) and postnatal factors of normal development is indefensible and pernicious. In practice generative hygiene cannot be narrowly circumscribed by academic distinctions, but must comprise all the orthogenic factors which condition normal development prior to and during conception, during the period of gestation, (and possibly during the first postnatal period of life, at least so far as concerns the item of breast feeding). In this paper time limitation compels me to restrict my remarks to the consideration of those hygienic measures, the application of which will make for the improvement of the in-born qualities of men, certainly as affects congenital traits, if not the hereditary, in the narrow Galtonian sense of the latter term. I shall state and attempt briefly to support four fundamental theses.

¹ An address delivered, in part, before the Eugenics Section of the Pittsburgh Academy of Arts and Sciences, May 15, 1914.

1. Society should prevent degenerate or anti-eugenical matings. It is alleged that about 15 per cent of the present generation produces 50 per cent of the next generation, and that this producing minority represents the poorer, lower or eugenically inferior elements of the population. Without conceding that this estimate is strictly correct, it is within the bounds of truth to say that all enlightened students of race betterment are agreed that palpable degenerates should not be permitted to marry. But we are not all agreed that the eugenically unfit can be diagnosed infallibly, or even to a measurably satisfactory extent. So far as relates to mental degenerates there are now in general use two methods of study by which it is hoped to make eugenic diagnoses:—first, the hereditary study of ancestral strains by the methods of heredity research; and secondly, the psychological observation or testing or study of the level of intelligence and of mental deviation.

Present day heredity studies are usually conducted with either a distinct Galtonian or Mendelian bias. In the United States the Mendelian bias is unmistakable. Judging by the recent publications of various American Mendelians, feeble-mindedness, insanity, epilepsy and other anti-eugenic mental conditions can now be subsumed under the Mendelian formula, and almost unerringly explained by it. Some American Mendelians indeed go as far as to assert that, given certain conditions of ancestral strains, they can now forecast with almost mathematical precision the relative incidence in future generations of normality, feeble-mindedness, insanity, or epilepsy. To these and other claims of the American school of Mendelian enthusiasts, I am still compelled to maintain the attitude of the discreet Missourian. I shall in no way here concern myself with pointing out the confusing, blundering, slipshod, inaccurate, unscientific ways in which many—fortunately not all—of the published heredity charts have been worked up and interpreted. I need merely refer to the recent exhaustive analysis and annihilating criticism of Heron⁸ which, unless refuted by other means than innuendo, rhetoric or mere denial, invalidate the results of many of the American investigations of feeble-mindedness, epilepsy, and insanity. While I cannot quite subscribe to all of Heron's conclusions, my observations of the work of heredity field-workers and my own study of the heredity of the mentally abnormal cases coming to my clinic, have convinced me that the prevailing methods of *gathering* heredity data have been no less unscientific than Heron has found to be the methods of *tabulating* the data and *interpreting* the charts. It should be emphasized that

⁸ David Heron. *Mendelism and the Problem of Mental Defect. I. A Criticism of Recent American Work.* Eugenics Laboratory Publications, London, 1913.

the accurate scientific determination of the etiological heredity factors of mental abnormalities is frequently just as difficult, abstruse, and technical as the scientific differential diagnosis of bodily diseases or mental deviations. The one essential preliminary to making reliable hereditary, no less than medical or psychological, diagnoses is prolonged training in the scientific methods of collecting, examining, analyzing, and interpreting facts—in other words, a thorough grounding in the canons of scientific induction. Many heredity charts are based on the sheerest guess work, on data gathered by persons quite lacking in scientific discrimination and quite unskilled in the art of hereditary, psychological, or medical diagnosis. It is one thing to send out field workers, usually teachers, nurses, and social workers who are novices in the methodology of scientific research, to interview parents, relatives, friends, enemies, clergymen, physicians, and court officers with regard to the mental condition of the contemporary or ancestral relatives of the cases under investigation; and then on the basis of the field-workers' reports, have someone else who has probably never seen or examined a single relative, construct awe-inspiring heredity charts, with a multitude of squares and circles, definitely and most minutely labeled and evaluated. But it is quite a different matter to assume that because certain symbols have been stamped on a piece of cloth, the correctness of the marking or the accuracy of the hearsay or snapshot estimations and diagnoses has thereby been conclusively established. Once the accuracy of the heredity diagnosis has been established, it is quite a different thing to assume that the condition of feeble-mindedness or insanity found in a given forebear is the all-sufficient or determining cause of the feeble-mindedness or insanity found in the "tainted" offspring. Unfortunately this assumption is usually made by the average field-worker without further ado. The presence of feeble-mindedness in the direct or indirect ancestral lines is regarded as the sufficient explanation of the feeble-mindedness found in the descendants. This reasoning is based on the fallacious assumption that what goes before must necessarily be the cause of that which follows, that when an antecedent resembles a consequent it must be the producing agent of the consequent, although, as is well known, there may be no causal relation whatever between sequential events. The fact is, there is frequently a plurality of causes responsible for any case of biologic variation, and no one but an experienced expert—and quite frequently not even the expert—will be able to determine indubitably which is cause or which is accidental antecedent or accompaniment. The apparent accuracy of many heredity charts is wholly deceptive and misleading. In my own clinic, I am constantly confronted with such cases as this: a

feeble-minded child with diphtheria or typhoid at, say, three, and with a grandfather or uncle or cousin who was alleged to be "feeble-minded," "queer" or "peculiar". What is the prime etiological factor here? How should such a case be charted? As inherited, or acquired feeble-mindedness? There is no unequivocal reply. Let us disabuse ourselves of the smug belief that heredity diagnoses are so easy that they can be made by anyone; or that we have located the causative agent when we have put a certain square or circle upon a chart. There are hundreds of thousands of mentally abnormal individuals in whom the etiological factors lie concealed in deepest obscurity. It is the duty of every sincere eugenist relentlessly to combat careless or unscientific heredity work wherever found—while it is also his duty to commend the really good work done—because it is being accepted at its face value by the uncritical, and because it is therefore leading to the enactment of precipitate legislation which in the end must bring discredit upon the science of eugenics.

The absurd belief that any so-called heredity field worker is competent to make scientific diagnoses after taking short courses on heredity field work, is akin to the dogma which has been promulgated in certain quarters, namely, that Binet testers are thoroughly qualified to make reliable psychological diagnoses of cases after taking a summer course on subnormal children and mental tests. This doctrine is responsible for the claims, made on the alleged basis of scientific tests (Binet tests by amateurs),³ that over 2 per cent of all elementary school children, that from 50 to 100 per cent (and nearer 100 per cent than 50 per cent) of voluntary prostitutes and juvenile delinquents and rather more than less than 50 per cent of adult criminals, are feeble-minded. As a matter of fact, there is no psychic measuring rod in existence by which we can automatically or mechanically identify accurately high grade mental degenerates or defectives, by which we can unerringly distinguish between high grade feeble-minded and backward cases, and by which we can determine whether the abnormality in high grade defectives is or is not anti-eugenic in character.⁴ But it is precisely the eugenically unfit persons who grade nearest the standard of mental normality whom it is most necessary to identify, because these individuals are the most numerous, they are the most prolific breeders and constitute the gravest social and moral offenders. It is quite easy to identify the lowest

³ For a discussion of what is meant by amateurs in this field of work, see "The Mental Health of the School Child." New Haven, Yale University Press, 1914.

⁴ In spite of the fact that this statement has been made on the best evidence a number of times during the last few years we still (December, 1913) read pronouncements by reputable physicians and psychologists like the following: "We recognise as feeble-minded anyone who doesn't pass the twelve-year Binet test." Think of the army of high school and even college students who would be condemned to feeble-mindedness on the basis of this arbitrary dictum!

grades of defectives by existing methods, but they are usually sterile and hence set no eugenic problem. Not only so; it is quite probable that many normal persons are carriers of transmissible degenerate strains, but there is at present no infallible method, whether psychological, hereditary, or medical, by which these individuals can be identified. Moreover, germ plasm which originally was eugenically fit probably may become impaired by external causes, so that dominants may be transformed into recessives, thus inverting the Mendelian laws. Even if Mendelism can be shown to apply, so complex is the mechanism of heredity on Mendelian principles that with only ten pairs of characteristics it is possible to form upward of 1000 kinds of germinal cells in one million different combinations. Therefore, while we all believe in the dominant force of heredity and in the teachings of negative eugenics so far as concerns the prevention of palpably degenerate matings, the ordinary field worker and the ordinary mental tester are frequently utterly unable reliably to differentiate between the eugenically fit and unfit, and even the scientific experts in heredo-biology and heredo-psychology are quite unable infallibly to identify all the high grade cases of eugenic unfitness or all cases of pure simplex or duplex normal stock. Nor do I know that there is any experimental or scientific warrant for the dictum that "weakness should marry strength." In the first place, I do not know that there is any authority who can make out an infallible chart of the eugenically weak or the eugenically strong traits which exist in the parties of a given marriage union, whether normal or high grade defective. In the second place, I know of no one who can guarantee that when weakness marries strength, the progeny will all be normal or that the weak traits will not eventually crop out as recessives in later generations.

The cautions which I have sounded against slipshod hereditary and psychological diagnoses may be reinforced by reference to a recent clinic case:

A young man of Russian-German descent, 21 years 1 month old at the time of the examination in January, 1914, the fourth of six children, born in Pennsylvania, removed to Germany at the age of six, remained there eleven years, returning to America four years ago.

The history of the case indicates that he was born on time, but the birth conditions were difficult, requiring an instrumental delivery after 48 hours of labor; that animation had to be established by slapping; that the mother was very nervous during gestation; that the child was very puny for some time after birth; that he was bottle-fed; that he was unable for some time to assimilate various artificial

foods, but finally began to grow rapidly on Mellin's Food and Swiss condensed milk.

At four he had whooping-cough, and hurt his head severely by running against a hinge on a door, which rendered him unconscious for a while, but he apparently recovered. At five he fell into a lime kiln, but only his hands were slightly burned before he was rescued. Somewhat later, after his removal to Germany, his caretaker reported that he had had a strange spell: crying out in his sleep, kicking, and jumping out of bed in a frenzy of excitement, although apparently unconscious throughout the entire performance. Spells of crying and kicking, without any attempt to wander about in the room, recurred several times during the following two weeks. (The boy reported that he had had an epileptic seizure at a much later date.) A short time after these occurrences he was vaccinated. After the operation his arm swelled greatly, and became discolored with dark blue spots. He was obliged to have it bandaged and supported on a table for a week. At seven he had measles; and at fourteen it was believed that he practiced self-abuse for a time.

As a child and a youth he was more or less queer: he never took any interest in games or sports, and never had any intimate boyhood friendships. He had a continuous record of outbursts, beating and slapping his sisters, engaging in fights and brawls with comrades and teachers, of lying and stealing, and of bragging and boasting.

His relations with his mother were almost always strained. His school history is one record of incompatibility and maladjustment. He entered a kindergarten in America at about six; the next year (in 1898) he removed to Germany and entered a second kindergarten, from which he was dismissed because of unruly conduct. In 1899 he had a private tutor for about a year. In 1900 he was placed in a boarding school, but was removed because he "could not fit in with the other pupils," and was kept at home for a while. In 1902, in a boys' boarding school, he proved to be stubborn, wilful, cowardly, morally obtuse, disobedient and disrespectful to teachers and elders. In 1903 he was permitted to remain less than a year in a higher school for a small group of select boys because of his thieving habits. He explained that he "stole because the others stole from me." In 1903 and 1904 he was placed in another private school. Here he did his best work because he became attached to one of the instructors, apparently because the latter gave him money, bought him toys and candy, and aided him unfairly in his lessons. At this time he manifested a desire to become a chauffeur, and rebelled against the scholastic and religious training. His parents suspected that there were secret understandings or clandestine relations between

the instructor and the boy, and therefore removed him to a private school of the aristocracy, where most of the teachers were young students. Here he was always getting into trouble and indulging in fist fights. He knocked a young teacher flat, because he claimed he did him an injustice. The director then dismissed him on the ground that he was not normal. He was returned home, and spent the summer of the same year (1906) in an informal vacation school. Here he led a free, natural life, without espionage, studying nature. Here he also had his first romance. The young girl proposed that he kiss her, but he did not do so because, as he alleged, he "did not know just how." This youthful romance upset the routine of his life for some time: he could neither study nor work, for "he was always thinking of her."

While staying at home he was constantly clashing with his mother. She punished him severely (he was "beaten until black and blue"), taunted him for his failures, nagged at him and forced him to apply himself to intellectual pursuits. He was so nervous and irritable that he could not endure his sister's piano practice, and accordingly started to demolish the instrument with a hammer. He would waylay the postman to see if any school circulars were sent to his parents. He ran away, and when the police were notified he tried to kill himself by hanging by a cord attached to a gas fixture. He was sent to an asylum for the insane, where he remained for six weeks, and where he was examined by three physicians, who pronounced him "not demented" but deficient and in need of protective oversight, and who counselled him to control his temper.

In 1909 he was sent to a preparatory day school, but was unable to make his examinations, "because he could not concentrate." In spite of this uninterrupted record of maladaptation in various school environments, the mother reports that she did not see anything wrong or abnormal with him until the age of fourteen: the father, however, reports that he was not normal from the age of eight. He is said to have completed higher mathematics and ancient and modern history, and to read English, German and French, although he has "no aptitude for languages." At this time he again expressed a desire to become a chauffeur.

In 1910 he returned with his parents to America. His first exploit here was to run away from a boarding-house in which he had been placed under kindly supervision. For some time he led the life of a vagabond, sleeping in parks and out-houses, and getting his food no one knew where. He broke into a house in New Jersey and was sent to jail. On his release he joined "robber bands" and came in contact with immoral women. He was finally taken in hand by the

Salvation Army, in New York City, and was sent to a half-brother, a landscape architect, in Minneapolis, who found a place for him as a clerk; but one day he struck his brother's wife because she would not let him wear her husband's new coat. He was thereupon placed in a private boarding-house, but soon enlisted in the navy. At the Norfolk Training School he got along fairly well until he began to steal—"but not," as he affirmed, "before the others stole from me." Here he was court-martialed several times for insubordination. On the battle-ship Minnesota he alleges that he was constantly teased and bullied by the sailors. On ship he was in disgrace most of the time. His entire income disappeared in fines. He talked freely of his "scrapes" to the social worker, of sailors clubbing officers, of his getting possession of money from drunken sailors, of his attempt to desert with another man at Vera Cruz. Finally he knocked a lad down because, as he says, "he stole from me," was court-martialed and dishonorably discharged in July, 1913—after about two and a half years of service. The boys on the battle-ship took up a collection and sent him to his parents.

His record since his return home has been one of insolence, disobedience, defiance, unemployment, and loafing. He left his first place, where he was taking care of a garden and a horse, because he was once asked to bring someone home at 11:00 P. M. After a week at home loafing and job-hunting he secured a job in a club-house which he held for three weeks. This was followed by a week's lay-off at home. Then he worked one week each in two hotels. After holding another job for about a week he returned home in September. Then he disappeared for about five weeks. On his return he said he had been taking care of chickens in a country place. Here he said two men threatened to shoot him. He now took a correspondence course in railroad engineering, but made no progress because he "failed to apply himself." Then he wanted to enter an automobile school, but clashed with his mother, became insolent, struck her in the face (she spat on him) and knocked his father down when he interfered. For their safety he was arrested on November 6th and incarcerated in the city jail for three weeks. He was released on parole for one year, with instructions to stay away from his parents. His parents supported him in a boarding-house in another part of the city. His mother then arranged to have him enter an automobile school. He backed out at first, finally entered the school, but at the end of the first day came home drunk, furiously angry because he had been allowed only \$5.00 instead of \$8.00 a week for his lodging and board, and threatened to kill his father.

At this point the aid of the psychological clinic was invoked.

The anthropometric examination showed that he was under-developed, but only to a slight extent, in standing and sitting (particularly) stature, weight, strength of grip, and in lung capacity. He had a number of carious teeth. On the mental side, however, he was very considerably retarded. His rating by the Binet tests was 10.6. His memory span was decidedly limited. In the motor speed test (form board) he measured twelve years. He did the simpler of the Healy puzzle tests but failed on the more difficult one. He failed on the clock-hand test (age XV), was unable to reproduce the central thought of a passage read to him (adult test), but just about passed the president-king test (age XV). To the question: If a horse weighs 1400 lbs. when standing on four legs, how much will he weigh when standing on three? he replied: "I cannot tell you. There is more weight in certain parts." To the question: If three men standing on top of a high tower can see six miles, how far can each one see? he replied: "Two miles." He said he did not smoke or drink, but late reports indicate that he does both. His chief defects, as observed by the examiner, were inability to concentrate or persevere, unwillingness to make serious effort or to work at his maximal potential, an all-too-ready tendency to be content with saying "I don't know," or "I didn't study that up," or to view the performance with supercilious scorn. He frequently intimated that he did not need to attempt answers if he did not want to, and that he did not see how the testing was going to help him get a job. He had been induced to come to the clinic in order that he might have his vocational fitness determined. His bearing throughout was more or less arrogant, he had an exaggerated opinion of his own worth, said that he would not under any circumstances take a position in a factory or mill (it was beneath his dignity), and that his only interest was in the automobile business. He seemed to feel that his parents were wealthy, and ought to support him in luxury; he entertained a warped attitude toward life; seemed to be lacking in feeling dynamic; and manifested evident emotional instability and abnormality of disposition. He complained that he had never been given a chance to make good, and did not leave the clinic in the best spirit.

After the examination he called upon the social worker again and again, although not always in a gentlemanly way, pleading with her to aid him; but he made it clear that he would not take any job that did not happen to appeal to his fancy. Finally, in order to guarantee him a chance at his frequently expressed vocational choice, the social worker managed to secure funds from the Association for the Improvement of the Poor with which to provide him with a two weeks' course in an automobile school. Money for board and lodg-

ing was supplied by the parents. It was impressed upon his mind that he would now get the chance he had been seeking, but if he did not stick to the work and make good the clinic could do nothing further for him. He seemed delighted over the prospect, and expressed his gratitude. But he remained in the school only one and a half days, and during this time he learned about as much as the ordinary student learns in two hours. When seen by the social worker his feeling of gratitude had entirely evaporated. He said he had not wanted to take the course in the first place—that the social worker had coaxed him to take it; that he saw nothing in it for him; and offered as a pretext for his intention to quit, the fact that his tuition had not been paid, although he had been assured that provision had been made to take care of his expenses. He was told that he could expect no further financial aid from the clinic or from his home, and that he would now have to shift for himself. After this he continued to call on the social worker almost daily, sometimes with a rude, surly manner, sometimes in an apologetic mood, sometimes comporting himself like a well-bred gentleman, sometimes leaving the house without bidding good-night. He made frequent appeals for another chance in another automobile school. He likewise continued to call at his parents' home, but was not always able to gain admittance. February 3, 1914, he forced his entrance through a window and stole a concert ticket, and on February 5th, on the advice of the clinic, he was arrested on the charge of incorrigibility, with a view to having him incarcerated in the state reformatory for industrial training under proper restraint. But since the judge failed to commit him, he was persuaded to spend a week in the observation ward of a hospital, and as a result of this further study he was committed on March 3d to an institution for the mentally disordered. On March 12th he had a disagreement with a patient, put a towel around his neck and attempted to choke him. Since the time he was disciplined for this offense his conduct has been fairly satisfactory.

I have given this history in some detail because this boy is a fair representative of a large army of abnormals who are not always recognized as sufficiently abnormal to require special educational care or social supervision, although they are an actual or potential menace in one way or another to society; who are usually allowed to drift along until they become confirmed social parasites, vagabonds or criminals, and for whose training and restraint society has thus far largely failed to provide the right kind of institution.

But now to the two points which I desired to illustrate by means of this case history. In the first place, is this boy feeble-minded? Undoubtedly so, if judged by a Binet diagnosis by a

Binet tester, for he measured only 10.6 years, thus being retarded about 10.5 years. But equally certainly not, if judged by the entire symptom-complex. His inferiority in the intelligence tests is not so much due to sheer lack of intelligence as to his abnormal attitudes, his lack of feeling dynamic or his excessive emotivity, his incapacity or unwillingness to apply himself. He belongs to that large army of borderland cases who are not quite feeble-minded nor yet palpably insane, but which make up the group of "unstables" who occupy the twilight zone between the distinctly amented on the one hand, and the mentally disordered on the other hand—a group of moral and mental inferiors, sometimes manifesting traits of high grade moral imbecility (or heboidophrenia), and sometimes presenting the aspects of constitutional inferiority, or psychopathic constitution, or masked or psychic epilepsy. These twilight states between sanity and insanity and between subnormality (*i.e.* feeble-mindedness) and normality cannot be diagnosticated by mere schemes of intelligence tests. Incidentally it may be said that these types of abnormal individuals should be diagnosed much earlier in their careers than is usually done. They should be picked out in the elementary and secondary schools, and be subjected to appropriate educational and physical treatment.

In the second place, is the boy eugenically unfit? Certainly he ought not to marry as long as he remains industrially incompetent, as long as his perspective of life is distorted, and as long as he manifests pronounced emotional instability and violent outbursts of temper. But is he unfit for eugenic procreation? We are in no position to dogmatize about this. The ancestral history is largely negative in respect to neuropathic taint. One paternal aunt died of tuberculosis, two paternal uncles died of heart disease, and one maternal brother died insane. The latter is said to have been perfectly normal until he received a severe blow on the head from a falling saddle. After recovery a second violent attack occurred during his honeymoon voyage across the ocean and was said to have been brought on by seasickness. Shall we say that the taint of insanity was inherent, and that the accident merely removed the barriers? Or shall we say that the disease was of accidental origin? There is no conclusive evidence for either view.

Coming to the boy's immediate family, we find that the oldest child, a sister, was prematurely born dead. The mother attributes the fatal prematurity to a severe fright caused by a fire which broke out in the room she was occupying. The second child died at the age of one from sunstroke. Her head was left exposed to a hot sun by a careless attendant. The other children are apparently normal

except a sister attending a boarding school, who is said to be capricious, high tempered, indiscreet, and a flirt. She likes the sensational, and has kleptomaniac tendencies. The father is a well-educated, cultured gentleman who has held responsible government and ecclesiastical positions here and abroad, while the mother also possesses a good education, having at one time taught in a high school. However, she is said to be very high spirited, and is subject to occasional violent outbursts of temper which often culminate in a fainting spell with loss of consciousness and stiffening of the limbs instead of convulsive movements. The husband reports that her hysterical manifestations date back at least to the time of their marriage. On her way to America before marriage she was in a shipwreck. From this experience she suffered a severe nervous shock. Shall we say that the abnormal manifestations of the mother are hereditary, or that they are due to the severe nervous shocks caused by fright experienced in a shipwreck and in a fire? An unequivocal answer is scarcely possible. Shall we say that the abnormalities of the son are due to a neuropathic taint transmitted by the mother, or that it is due to difficult birth, to the head blow received at the age of five, to the punishment he received from his mother, and to the influence of her abnormal behavior, or to a combination of environmental and hereditary factors? Is it not clear that when the factors are so complicated as in this case—and this case is typical of thousands of others—we are not solving the problem by stamping an heredity symbol on a chart, and assuming the correctness of the symbol. Who is ready to affirm that this boy, provided he could be trained to live a normal life and to marry a normal girl, would be unfitted for eugenic procreation? Who is able to *demonstrate* that he would or would not be so fitted? The fact is, eugenic diagnosis is not far enough advanced to permit of unequivocal answers in thousands of cases difficult to diagnose.

While it is important, therefore, that we recognize the difficulties involved in the correct diagnosis of anti-eugenic stocks, it must not be forgotten that the most important factor in eugenical hygiene is the prevention of the propagation of inherently, that is hereditarily, weakened, defective, and degenerate strains.

2. Society should adopt measures to prevent the *syphilization* of the unborn child. Numerous investigations have been made to determine the influence of parental syphilis upon the foetal and post-foetal child, but the results have often led to disagreement and controversy. That parental syphilis is at least *one* of the causes of the abortion, miscarriage, or early mortality of many both eugenically fit and unfit infants seems to me to be strongly indicated by

the available evidence. The importance of this conclusion, if true, may be judged from the following figures:—

According to the best estimates, from one-fifth to one-fourth of all the children born die before the age of one year, and one-third before the age of five years. At least one-third of infant mortality is due to prenatal causes, to prematurity and still-births. If the prematures (all infants weighing less than five pounds) weigh only four pounds or less, 98 per cent of them die, unless they are properly cared for in incubator hospitals (in such hospitals in France the mortality rate has been reduced to from 15 to 25 per cent), while if they weigh somewhat over four pounds the mortality varies from 15 per cent for breast fed to 41 per cent for bottle fed infants. Fully one-half of the deaths within the first month of life in New York City in 1911 to 1912 were due to prematurity or congenital weakness (Henry Koplik), while 80 per cent of the deaths in the first week in the state of Michigan from 1910 to 1912 were due to prematurity, deficient vitality, and congenital malformations. The percentage of still-born in Germany in 1906 amounted to 3 per cent of all births, and in New York City in 1911 and 1912, 5 per cent (Henry Koplik). The proportion of prematures, still-births and births which barely escape these conditions, varies greatly in different localities but it is thought to be increasing in all civilized countries (Kaye). In certain districts in England the number of still-births increased from 47.3 per 1000 in 1901 to 56.3 per 1000 in 1905.

Now, since prenatal syphilis may be transmitted with full virulence to the offspring and since it is almost certainly transmitted when the mother suffers from the secondary symptoms, it would be strange if it did not somehow affect the causation of prematurity, still-birth at term, congenital debility and early infant mortality. Positive studies indicate that it exerts a very perceptible influence.

One authority finds that when the father is infected, nearly 40 per cent of the babies perish, while the mortality when the mother is also infected, ranges between 60 and 80 per cent. One-third die within the first six months, while the chance of dying under fifteen is seven times greater for the syphilitic than for the non-syphilitic (Prince Morrow). Of 206 syphilitic pregnancies in France, abortions occurred in 36, still-births in 8, and deaths soon after birth in 69, giving a mortality of 55 per cent. Fifty of the living children were syphilitic, while only 43 were in good health (Jullien). In another group of 154 syphilitic pregnancies, there were 120 abortions or still-births, 26 deaths soon after birth and only 8 survivals (Le Pileur). In the Foundling Asylum in Moscow,

the mortality among 2038 syphilitic infants amounted to 70 per cent. One authority maintains that the number of still-births among illegitimate children amounts to 50 per cent more than among those born in wedlock, but another writer (Weinberg) states that the difference amounts to only one per cent. The latter investigator, however, admits that the illegitimates suffer from congenital debility—undoubtedly due in part to syphilis infection—and are thus more predisposed to morbidity, inanition, atrophy, and gastrointestinal disorders which lead to death later. Moreover, it is to be remembered that there are thousands of abortions of illegitimates that never become a matter of record. It is probably true that most congenitally syphilitic children are healthy at birth and do not show the symptoms until between the first and sixth week. Nevertheless, it is more difficult to cure infantile than adult syphilis and more difficult to cure the congenital than the acquired type. Indeed, debilitated children, whatever the cause of the debility, offer little hope for progressive amelioration. Thus the death reductions in New York City during the last thirty years amounted to 70 per cent for contagious diseases, 38 per cent for respiratory diseases, 37 per cent for diarrhea cases, but only 4 per cent for congenital debility cases. The susceptibility of syphilitic children to the following diseases is said to be greater than for non-syphilitic children by the ratios indicated:—

Typhoid.....	nearly 2½ times
Scarlet Fever.....	" 3 "
Measles.....	" 3½ "
Diphtheria.....	" 7 "

Thirty per cent of the cases with tubercular hip disease; 40 per cent of the cases with gastroenteritis, and 60 per cent of the cases with tubercular meningitis, are congenital syphilitics (Prince Morrow). Congenital syphilis lessens both the constitutional and local resistance and leaves many, if not most, of the surviving children delicate, thin, poorly nourished, suffering from bone disorders and malformations, and with delayed development of dentition, speech, walking, physical growth, and puberty. The arrest at times amounts to actual infantilism. At three or four the child may be without teeth, and at ten or eleven he may have the physical growth of the six year old. In intelligence or morality he sometimes becomes imbecilic or insane, or a moral degenerate or pervert.

Although the evidence is not conclusive, congenital syphilis is probably one of the causes of insanity (of 25 per cent of inherited insanity, say some) and feeble-mindedness. One authority found a syphilitic family history in 80 per cent of 40 carefully investigated cases of juvenile dementia ("juvenile general paralysis"—F. W.

Mott). A careful study of the family histories of 90 feeble-minded patients over sixteen years of age showed that one or the other of the parents were syphilitic in 14.4 per cent of the cases (E. B. Sherlock). Likewise a positive Wasserman was secured in 15.4 per cent of 330 idiots, although only 3 per cent could be classed as syphilitic suspects (H. R. Dean). On the other hand, in an investigation of 2400 pauper idiots in London, clear evidences of congenital syphilis were found in only 1.17 per cent of the cases, although it was suspected in a larger number (G. E. Shuttleworth and F. Beach). Other investigators give the percentage as 2 (Langdon Down, Kerlin) and 2.5 (A. F. Tredgold). There are, of course, many cases of congenital syphilis which can be recognized only with difficulty, even with the aid of refined laboratory technique. Were these cases added the percentage would be somewhat increased. Nevertheless, parental syphilis is, I believe, only a minor cause of actual feeble-mindedness; but this question cannot be satisfactorily settled until we have gathered extensive parallel data for normal cases.

On the other hand, gonococcus infection is probably the chief cause of sterility, and of 75 per cent of infant blindness. The sterility and the blindness probably affect the fit as well as the unfit stock in equal measure.

Venereal diseases thus constitute one of the arch destroyers of human stock which may be inherently noble and in every way eugenically fit. The racial injury is just as positive even if the hereditary qualities are but slightly affected. One of the important eugenic measures, therefore, is the desyphilization of the human race. The campaign against the black plague would be easy if human beings could be persuaded to live virtuous lives. But many persons cannot be persuaded thus to live by the logic of fact or by appeal to conscience and must therefore be brought to bay, so far as possible, through the instrumentality of prohibitive legislation. The fight must go on until laws have been placed on the statute books everywhere requiring the registration of infected persons, together with the prohibition of marriage or intercourse between such persons until they are cured. If this does not prove effective, we may, for the sake of the preservation of racial purity, be forced to follow the example of the army surgeons in various civilized countries who compel soldiers who will not live within the moral law to use prophylactics. This practice may not conform to our traditional principles of morality, but it seems to me that humanity is in the process of evolving a new ethical code based upon eugenic imperatives. Any measure will merit the eugenical sanction if the ultimate result is the permanent improvement or preservation of the human stock. Is not the enforced use of

venereal prophylactics better than the wholesale slaughter of potentially robust innocents and the possible pollution of the race stream?

3. The procreation of mentally and physically robust offspring is endangered by the *alcoholization* of the parents and of the embryonic and foetal life. Here again the evidence is not conclusive. The investigators of the Francis Galton Laboratory for National Eugenics have come to two important conclusions: first, that parental alcoholism is almost a negligible factor in eugenic procreation; and, secondly, that practically all of the investigations save their own are irrelevant or worthless. While admitting that the investigations of human alcoholism rather *suggest* than indubitably *demonstrate* that alcohol is a race poison, it seems to me that many of the conclusions based on animal experimentation amount to positive demonstration, and that the results thus reached can be applied analogically to the question of human heredity.

Most suggestive, as indicating the possibility of injuring the reproductive and somatic cells of the offspring by parental indulgence in alcohol are certain experiments on normal guinea-pigs which were obliged to inhale controlled quantities of the fumes of alcohol or ether for six days weekly during extensive periods of time, amounting to three years in some cases. In order to secure normal stock for this experiment pigs were first tested by normal matings. The treatment did not affect the health or development of the pigs. The alcoholized males and females, as well as the unalcoholized descendants of alcoholized parentage, were mated with both normal and alcoholized stock.

The results showed that "an alcoholized male guinea-pig almost invariably begets defective offspring even when mated with a vigorous normal female," and that the effects were nearly as bad on the second generation (Stockard). Of 103 full term matings 42 per cent gave negative results or early abortions, 13.5 per cent gave still-born litters, 45 per cent resulted in living litters, containing 89 young of whom only 58 per cent survived. On the other hand, the 35 control normal matings gave 94 per cent of full term litters, about $\frac{1}{3}$ per cent of still-born litters, 91.5 per cent of living litters, containing 60 young of whom 93 per cent survived. The proportion of alcohol in the testes and in the ovary compared with the proportion in the blood has been found to be as 2 to 3 and 3 to 5, respectively (Nicloux and Renauet). Alcohol, therefore, apparently can act deleteriously directly on the spermatozoa and eggs before or during the period of impregnation.

Studies of human alcoholism indicate that alcohol produces almost instantaneous changes in the constituents of the blood

(Richardson), lessening the normal resistance of the red corpuscles (Laitenen) and producing temporary paralysis of the phagocytes (Metchnikoff), while in women it may also temporarily paralyze the ovum and produce ovarian degeneration (Lancereaux). In the male alcohol has similar effects on the blood and the spermatozoa, and leads to testicular degeneration or atrophy. In 39 chronic alcoholics atrophy of the testicular tissue was found in 37 cases (Weichselbaum), while azoospermia was found in 60 per cent of autopsied alcoholics (Simonds).

If the above conclusions are correct, alcoholic indulgence before and during conception and maternal indulgence during pregnancy should be especially sinister for the offspring. The embryo of a drunken mother is like another drunkard, for both are nourished by the same blood stream. When the mother's blood is saturated with alcoholic poison it is improbable that the embryo will be normally nourished. So well known is the fact of alcoholic arrest, that some expectant mothers in Switzerland deliberately use alcohol in order to lessen the pains of childbirth. Although alcoholized infants may be born healthy looking, they tend to manifest diminished power of growth. The difference between the weights of babies of drinkers and abstainers has amounted to 3.6 per cent and 4.4 per cent for boys and girls, respectively, while at 7 and 8 months the corresponding figures amounted to 2.2 per cent and 7.2 per cent.

That there is a causal relation between alcoholism and sterility, abortion, prematurity, still-birth, inability to lactate, infant mortality and degeneracy is indicated by numerous studies. Of 107 English women investigated who died of alcoholism before the age of 29, 8 bore no children, while 99 bore only 6 delicate and deformed children. But twenty-nine vigorous children were born to these mothers before they became alcoholic (Lonnet). A similar inquiry based on thirteen inebriate women showed that the children born before the onset of the inebriety were normal, while those born after its onset were 'weak-minded' (R. J. Paris). Of the 600 infants born of 120 female inebriates in whom the factors making for degeneracy (such as tuberculosis, nervousness, syphilis) were eliminated except alcoholism, 55.8 per cent were still-born or died before the age of two, mostly of convulsions, and the mortality was 2½ times greater for these infants than for infants of sober mothers (W. C. Sullivan). During the period from 1874 to 1904 the still-births from each 1000 conceptions in France amounted to 5.36 for certain absinthe districts (southern part), 4.48 for certain alcoholic districts, but only 3.62 for certain non-alcoholic districts (Henri Schmidt).

(To be concluded.)

SPEECH DEFECTS IN YOUNG CHILDREN.

BY CAROLYN E. MORRISON,

Hibbing, Minn.

If the worth of an ounce of prevention is to be realized in our public schools, the time must surely come soon when as careful examinations will be accorded *every* child as are now advocated for those who are "suspected" of social unfitness.

In a study of some of the causes of retardation in the first grade, the attention of the writer was called to the presence of many speech defects among the children. Speech defects rarely receive much attention from either parents or teachers until the habits are so firmly fixed that a long period of training is necessary for their correction. For this reason there was undertaken a careful examination of the speech habits of each of the two hundred eighteen children in four kindergarten and four first primary classes. The first tests were made in October, 1913. At that time in the primary classes there were but eight children who were over seven years of age and the majority of them were a little over six. In the kindergarten there were only a very few over six and none under five years of age. The majority had just passed their fifth birthday.

As most authorities agree that speech habits become fairly well fixed at the age of four years, it seemed reasonable to suppose that incorrect habits persisting at five and six years of age might in many cases remain uncorrected if the child were given no assistance in forming correct habits.

The method employed in the analysis of the speech habits was that used in the Psychological Clinic at the University of Pennsylvania. A list of nearly one hundred words was chosen, containing all the common combinations of the consonant sounds both as initial and final elements in syllabic formations. The words were such as could be illustrated by pictures which were pasted upon cards. Pictures of interest to small children were selected and arranged in such a way that either the picture itself or a question in regard to it would call forth from the child a response using the sound or combination of sounds to be tested. In this way any imitation was avoided and the child's habitual forms of articulation were secured. The following questions and responses were typical: "What is that?" "A squirrel." "What color is that?" "Blue," or "Red". "What is the little girl doing?" "Smelling the flowers."

The tests were given by two of the kindergarten assistants,

Miss Olive Paine and Miss Grace McGee, and the writer, all of whom were known to the children. There was therefore no element of strangeness for the children and the pictures were greatly enjoyed. Each child was removed from the class and tested alone. In recording results the word given incorrectly was written down, but minor defects, such as the weakened aspirate in "wheel", the clipping of the final *g* in "ing", and others of a similar nature were not considered. Only those sounds that by omission or by substitution tended to mark the child by what is commonly known as "crooked" talking were recorded. "Dis" for "this", "gled" for "red", "poon" for "spoon", "fowers" for "flowers", and "tat" for "cat" were the type of errors recorded.

Subject													No. of Errors
1		ch		g		l	r	s	sh	th			7
2		ch	f		k	l	r	s	sh	th			4
3		ch					r	s	sh	th			7
4							r	s	sh	th			3
5							r	s	sh	th			3
6							r	s	sh	th			1
7	b	ch	f		k	l	r	s	sh	th		y	10
8		ch	f			l		s	sh	th			4
9						l		s	sh	th			4
10						l		s	sh	th			2
11		ch						s	sh	th			3
12								s	sh	th	w		1
13								s	sh	th			3
14								s	sh	th			2
15						l		s	sh	th			1
16		ch			k	l	r	s	sh	th		y	8
17		ch			k	l	r	s	sh	th	w	y	8
18					k	l	r	s	sh	th			1
19		ch					r	s	sh	th			4
20							r	s	sh	th			1
21		ch	f		k	l	r	s	sh	th		y	8
22		ch					r	s	sh	th			1
23		ch	f	g	k		r	s	sh	th	w		8
24							r	s	sh	th			5
25							r	s	sh	th			2
26							r	s	sh	th			1
27						l	r	s	sh	th	w		3
28						l	r	s	sh	th			3
	1	11	5	2	6	12	13	23	9	18	4	4	

The results when tabulated showed that of the 218 children tested, 107, or 49 per cent, did not give the *th* sounds correctly. As this is one of the latest sounds to be correctly learned by young children and as about one-third of the children were from homes where languages that do not contain the sound were spoken, no further study of those children was undertaken, except that which will be mentioned under treatment.

When the children failing only in the *th* sound were eliminated, there were left 28 children, or 12.8 per cent of all tested who showed marked defects of articulation. The errors and their frequency are shown in the accompanying table.

This table shows that aside from the *th* incorrect habits were shown most often in the use of *ch* as in "chair", *k* or hard *c*, *l*, *r*, *s* and *sh*, all of which are among the more difficult sounds. The incorrect sounds used by any one child ranged from one to ten. Some of the worst talkers, however, were deficient in but a few sounds as in the case of No. 27. This boy gave "dink" for "drink", "gled" for "red", "olange" for "orange", "bubbun" for "bubble", "bottun" for "bottle", and "Chlistmas" for "Christmas" which together with nasalizing and lack of force in pronouncing the throat sounds made his speech so defective that it was difficult to understand much of his ordinary conversation.

A second test was made with these twenty-eight children by pronouncing for them the words that each had missed and having each repeat the word as best he could after having heard its correct form. Practically none of the sounds were corrected from simply hearing the correct forms.

Many of the children of the group appeared below the normal in physical vigor and there were many evidences of imperfect air channels of the mouth, nose, and pharynx which would be likely to initiate the improper use of the vocal organs. Each child, therefore, was given a physical examination. The table following shows the results:

Children examined.....	28
Adenoids.....	25
Enlarged tonsils.....	21
Enlarged glands.....	15
Tongue-tied.....	3
Thickened tongue.....	2
Very narrow and ill-formed throat.....	1
Broadly separated and ill-formed teeth.....	1
Clean bill of health.....	1

Five months later when the membership of these eight classes had been slightly changed by the dropping out of some pupils and the entrance of others, the teachers of the classes were asked to rank their pupils as nearly as they could according to general intelligence. Rank 1 indicated children of exceptional ability, rank 2 bright children, rank 3 children of average ability, rank 4 dull or slow children, and rank 5 borderline children, or mental defectives. The following is the distribution:

Rank.			
1.....	.....	6 per cent	
2.....	.....	22	"
3.....	.....	38	"
4.....	.....	31	"
5.....	.....	3	"

This ranking was made by the teachers for other purposes and with no reference at this time to the children with speech defects.

From the list of rankings the rankings of the 25 of the 28 children who then remained in the classes were taken. None were found in the group ranked highest, two were in the second group, six were in the third group, fifteen were in the fourth group and two in the group ranked as lowest. As the whole group used in the ranking test was not precisely the same group as that used in the first speech test it is not fair to state the per cent of speech defectives in each of the groups of the ranking. There was, however but slight change in the group and there is no reason to suppose that the general character of the group was changed. It is, therefore, safe to say that approximately the 6 per cent of exceptional children showed no speech defects, the 22 per cent of those called bright furnished only 8 per cent of those with speech defects; the 38 per cent of average children, 24 per cent; the 31 per cent of dull or slow children, 60 per cent; and the 3 per cent of the lowest class, 8 per cent of those having speech defects. The ratios are as follows:

Exceptional.	Bright.	Average.	Dull.	Defective.
0	.36	.63	1.93	2.66

The results of the examination of these 218 children showed that there were a considerable number who needed more or less attention to insure correct habits of speech and that there was a close correlation between speech defectiveness and physical defects and general mental ability.

Treatment.

As soon as the speech tests and the physical examination had been given, training was begun. A list of familiar words involving the uses of *th* was selected and given to each of the eight teachers with the names of the children defective in those sounds alone. Instruction was given to these children as groups and the difficulties were quickly remedied. The remaining twenty-eight children were given individual instruction by the writer, each child receiving an average of ten lessons of about three minutes each, extending over a period of about three weeks. At the end of that time all but four of the children were able to place the vocal organs in correct position and to give the sounds correctly, but most of them were not yet able to refrain from falling into incorrect habits when away from the instructor. Of the four remaining children two were absent because of illness. No. 27 had not yet learned to give *l* and *r* correctly in words, and No. 26 was still using *sh* for *s* because of the position of the teeth. At this time it was necessary to hand the work over to the classroom teachers. Each teacher was given the names of the three or four of these children in her room with a list of words for each child containing the sounds in the use of which he was deficient. Where possible the teachers also secured the co-operation of the parents, which in many cases was hearty. Each teacher devoted but a very few moments per day to each child either within or outside of regular class periods. The time spent was relatively small but the work was directed toward the individual child needing it and not given in the form of the usual enunciation drill which includes both the children who do and the children who do not need it.

At the end of four months, twenty-one of these children were re-examined. Nine were practically cured, nine showed marked improvement, and three showed little or no improvement. None appeared unimprovable. There is no evidence to indicate how much these children would in time have corrected their own speech, but there is every reason to believe that many of them would have continued in the faulty habits long enough to have seriously interfered with both the oral and written language work of the early grades.

A STUDY OF DELINQUENT GIRLS.

BY W. H. PYLE, PH.D.

The University of Missouri, Columbia, Mo.

At the invitation of Mrs. A. M. Clay, superintendent of the State Industrial Home for Girls at Chillicothe, Missouri, and Mr. W. L. Wagner, secretary of the state board of charities, I undertook a mental and physical examination of the girls in the industrial home. The time at my disposal was so limited that I could not undertake individual tests. I did not, therefore, use the Binet tests, but used the group tests described in my manual, *The Examination of School Children*, and in addition two Ebbinghaus tests. The physical examination consisted in tests of visual and auditory acuity and of muscular strength and speed.

The number of girls in the home was about 240. They were between the ages of 7 and 21, most of them being 16, 17 or 18. According to the state law, these girls had been convicted of being vagrants, or of some offense not punishable with death or imprisonment for life, or their associations had been immoral or criminal, or bad and vicious, or the girls had been incorrigible to such an extent that they could not be controlled by parents or guardians.

The primary object of our examination was to find out how many of the girls were of normal mentality and how many were feeble-minded. Since norms for the mental tests used had already been established, it seemed that a comparison of the results obtained from the delinquent girls with those obtained from normal girls ought to give a fair indication of their mentality. A very brief description of the tests used is perhaps necessary. The *substitution* test determines quickness of learning. The type of learning is substituting new characters for the nine digits. The test consists of five minutes practice in writing numbers in the new characters. The *invention* test determines ability to make words using certain prescribed letters. The *free association* test determines the quickness of the flow of ideas when no restriction is imposed. The subjects started with the word *play* and wrote as many words as they could think of in three minutes. In controlled association, the *opposites* test was used. Four lists of ten each were used. The *logical* and *rote memory* tests need no explanation. For the former, the Whipple *Marble Statue* was used, and for the rote memory the lists of concrete and abstract words in the writer's manual were used. The *ink-bLOTS* test aspects of imagination and association. The Whipple set of twenty blots was used. The girls were allowed three minutes in which to write down what the blots suggested.

In tables I and II, the results are compared with those obtained from girls in the public schools. In table I, the ages of the girls are given in the first column, the standing of the delinquent girls in the second column, the standing of normal girls in the third column. In the fourth is shown the percentage which the standing of the delinquent girls is of that of the normal girls. It will be seen that on the average, the standing of delinquent girls is only 65 per cent of that of normal girls, ranging from 87 per cent in free association to 45 per cent in the opposites test.

TABLE I.

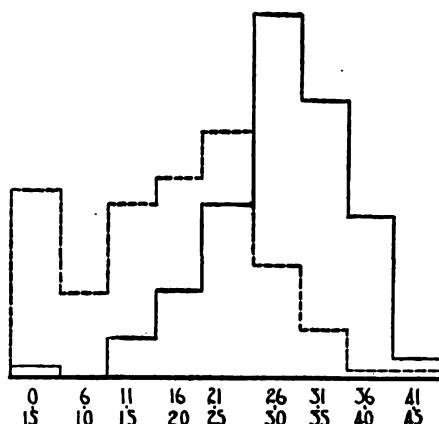
Substitution				Invention			Free Association		
Age	Del.	Norm	Percent of Norm	Del.	Norm	Percent of Norm	Del.	Norm	Percent of Norm
15	12	26.8	44	7.5	15.0	50	34	40.2	84
16	18	27.5	65	10.4	13.5	77	36	40.9	88
17	18	28.5	63	11.0	13.9	79	41	41.6	100
18	17	25.9	65	11.7	18.8	62	38	47.1	80
19	15	25.9	57	10.0	18.8	53	41	47.1	87
Av. % of normal .				64			87		
Logical Memory				Rote Memory			Ink-blot Test		
Age	Del.	Norm	Percent of Norm	Del.	Norm	Percent of Norm	Del.	Norm	Percent of Norm
15	20	39.1	51	28	40	70	6.7	10.4	64
16	27	37.3	72	34	41	83	6.0	8.5	71
17	28	36.6	76	34	38	89	6.7	9.4	71
18	26	37.8	66	35	40	87	5.9	12.0	49
19	26	37.8	66	34	40	85	5.0	10.0	50
Av. % of normal ..				83			61		
Opposites				TABLE II.					
Age	Del.	Norm	Percent of Norm	Test		I	II	III	IV
15	9	17	52	Logical Memory		66	10.5	30	88
16	12	19	62	Rote Memory . . .		83	22.0	47	63
17	12	21	56	Substitution		59	13.0	32	76
18	12	23	52	Opposites		45	2.5	15	64
19	12	23	59	Free Association		87	38.0	72	50
Av. % of normal .				Invention		50	18.0	34	72
Av. % of normal .				Average		65	17	38	69

In table II, column I shows the percentage which the standing of the delinquent girls is of that of normal girls. In the second column is shown the number of delinquent girls—expressed in per cent—that make the average of normal girls. For example, in logical memory 10.5 per cent of the delinquent girls are as good as the average of normal girls. In column III, is shown the percentage of delinquent girls who are within the average deviation of the average of the normal girls. In column IV is shown the percentage of delinquent girls who are three years or more behind the norms for their ages.

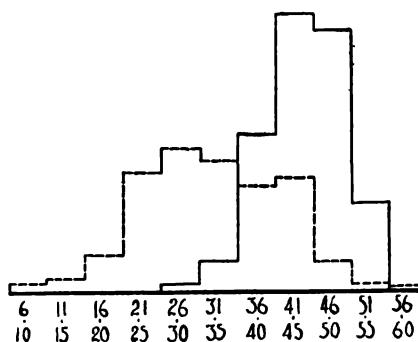
In the Ebbinghaus test ("completion method") *Where the Dandelions Went* and the *Strength of the Eagle* from Whipple's Manual were used. Norms for the various school ages have not been worked out for these tests. We therefore compare the delinquent girls with the girls in the Mexico and Hannibal, Mo., high schools, and with sixth grade children in the Jefferson school, Columbia, Mo. The high school pupils considered in the comparison, are the ten poorest pupils in the Mexico school and the sixteen poorest in the Hannibal high school. The standing of the delinquent girls in these tests was 50 per cent of the average standing of the sixth grade pupils. The ages of the sixth grade pupils averaged about 13 years, while the delinquent girls average about 17 years. The standing of the delinquent girls was only 44 per cent of the average standing of the poorest high school pupils. Eighty-seven and one-half per cent of the delinquent girls are no better than the average of thirteen year old children.

In the graphs the distribution of the girls with respect to some of the mental test grades is compared with that of the girls in the Mexico high school. The ages of the high school girls was about the same as the ages of the delinquent girls. Normal girls are represented in the graphs by the solid line and delinquent girls by the broken line. The grades or marks made in the tests are shown along the base, poor at the left, good at the right. And the number of girls making the respective grades is shown by the height of the graph at that point. It will be seen that the best of the delinquent girls are as good as the best of the high school girls, but that there are many more poor delinquent girls.

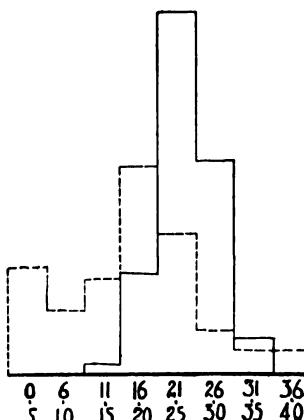
In the strength test the Smedley dynamometer was used, and speed was determined by the use of a tapping board and electrical counter. There is very little difference between the results obtained from the delinquent girls and the results obtained by Smedley in his tests of Chicago girls. The average right hand grip was 28.4, left hand, 27. The average right hand speed was 189, left hand, 159.



I. LOGICAL MEMORY.



II. ROTE MEMORY.



III. SUBSTITUTION.

A detailed comparison by ages is not necessary, for the results are practically the same for the various ages, as the Smedley norms. The Smedley norms for the age 17 are for grip, right hand, 29.56, left hand, 27.43; speed right hand 184, left hand, 162.

In the strength tests, the ratio of the left hand to the right hand is about the same as with the Chicago girls. In speed, the delinquents are slightly more ambidextrous, the ratio being 89 per cent, while with Chicago girls it was 86 per cent. But this difference is too small to be of any significance.

In the examination of visual acuity my purpose was to determine whether vision was poor enough to need the attention of an oculist. I used a Snellen test chart, seating the girls 20 feet distant. My criterion was as follows: if a girl's vision was as poor as 2/3 in either eye, or if the vision was as good as 20/25 but the girl complained of any effects of eye-strain, she was recorded as having poor vision. Using this criterion, I found 140 girls that needed the services of an oculist. There were 50 girls that had no better vision than 2/3 and had never worn glasses or been examined by an oculist. Fifty-eight per cent, therefore, have poor vision. Twenty per cent have very poor vision and have never worn glasses or been examined by an oculist. That 50 of these girls with very poor vision should reach maturity without ever having their eyes examined is a fact for serious consideration. I have no doubt that eye-strain resulting from poor vision has been an important factor in the lives of many of these girls. Eye-strain, with other factors, has sent many of them to the institution, and doubtless some of them would never have been sent there if their vision had been corrected in early life. I did not take time to determine the exact nature of each defect, but it was evident that most cases of defective vision were due to myopia or astigmatism, usually both. Two cases of red-green color blindness were discovered.

Hearing was tested by means of a Pilling-McCallie audiometer. There were seven cases of serious defects of hearing and ten cases of slight defects in one or both ears. This is probably no more than would be found in the general population.

We conclude from our study that there is a close relation between mental defect and crime. Our figures would indicate that about one-third of these delinquent girls are normal and about two-thirds are subnormal. Most of them are probably high grade morons.

When young people are committed to such an institution as this, they should be carefully examined and tested physically and mentally. They should then be classified according to their ability

and each one trained according to the ability shown. Certainly every physical defect should be corrected if possible. However, the real solution of moral delinquency is to get hold of possible delinquents early in their lives. These girls are, most of them, 16, 17, 18, and 19 years old. Their salvation is now a difficult matter. Proper treatment earlier might have saved many of them. Children in the public schools should be carefully examined in mind and body, once or twice a year, and in several states this is already being done. Their classification and training should be in harmony with the results shown by these examinations. Those found to be of feeble mind should be segregated and taught in special classes or special schools. State reformatory institutions should be under the direction not only of physicians but of trained psychologists and teachers of the highest qualification and sound experience. When a boy or girl goes wrong every means known to science should be used to find out why, and society should use every means at its command to bring about reformation,—better still, to prevent the going wrong. Certainly the training of an abnormal child, particularly one who has gone wrong, demands the highest knowledge and skill. State institutions that deal with society's unfortunates, should be removed from the realm of politics and brought within the realm of science.

REVIEWS AND CRITICISM.

The Hygiene of the School Child. By Lewis M. Terman, Ph.D., Associate Professor of Education in Leland Stanford Junior University. New York: Houghton Mifflin Company, 1913. Pp. xvii+417.

It is Professor Terman's opinion that the school is now aware of its responsibility for the conservation of the child. According to him, "The most characteristic tendency of present-day education is its progressive socialization, the increasing extent to which society is utilizing the school as an instrument for the accomplishment of its ends." His aim in this book is not to present a program for the schools or to attempt to foist upon them a system of hygiene and preventive treatment which he himself has applied. Rather it is the much more reasonable aim of presenting to the reader a summary and interpretation of literature relating to various phases of the question. The success of his attempt will be appreciated by any one familiar with the material. Commencing with the fundamental concept of growth, the author, by reviewing the work and presenting the conclusions of experts in the field, shows how growth proceeds,—how at certain stages it is accelerated and at others retarded and how, because of these facts, methods of training should be modified. With a physical organism poorly developed one would expect an unsatisfactory mental condition, and one finds that "The conclusion, justified by the data, that physical superiority usually accompanies mental superiority, is of the greatest practical importance for education."

The chapter on physiological age is certainly not the least important section. There is no doubt in the author's mind about the difficulty of the problem presented by the discrepancy between physiological and chronological age. Our treatment of the child has usually been accorded on the basis of the latter but now, "Closer investigations of the relations existing between the anatomical, physiological, and mental ages is one of the urgent problems of educational hygiene." In the light of the difference even now discovered we are compelled to review the entire problem of the identical coeducation of the sexes and "In deciding the boy's fitness for a given athletic sport, or for a certificate permitting him to leave school to work in a mill, or even for instruction in a given grade, the crucial question is not how long he has lived, but how far he has proceeded toward maturity." In reference to this last statement the remark might be made that if we consider physiological rather than chronological age we will have eliminated the difficulty of determining the reliability of a parent's word when he says his child has reached working age.

The disorders of growth, in the more or less artificial environment of our schools, must receive more attention, not only from the parent and family physician but also from the teacher; and every teacher should be trained to observe the signs of the common dangers and to advise remedial treatment for them. Gross deformities are easily recognized, but the effects of malnutrition, anæmia, adenoids, enlarged tonsils or bad teeth as well as the handicap of defective vision or hearing can less easily be noted. In their more serious forms,

however, they may be recognized by the teacher who has not been specially trained. For the detection of the less serious forms we will have to make other provision, and the day is not far distant when "a knowledge of the elements of child hygiene will be regarded as of fundamental importance in the training of every teacher."

To some who have pet theories the book may bring a shock, since the author is not inclined to be excessively lenient when there is such an important problem to handle. Several current opinions are dealt their death blow. Ventilation, that panacea for all the ills of the school, according to some of its most enthusiastic advocates, is shown to be a vastly different problem from what it has usually been considered. It is no longer a question of the elimination of carbon-dioxide or organic poisons, but one of "perflation" or the "movement of air over the body." Curvature of the spine, the war-cry of those insisting on the installation of new and various types of school furniture, is now found due to abnormal or diseased conditions of the bones and only in a very secondary degree, if at all, to the position assumed by the child during school work. Of the theories overthrown the last to need mention is that of parental responsibility,—"The first duty of the school is to feed its hungry pupils. The oft-heard argument that the school has no concern with the child, except to educate him, is now an anachronism. In its vocational instruction, play supervision, moral education, health examinations, and medical clinics the school has once for all cut loose from its moorings to the 'Three R's.'

Despite the fact that the author presents his conclusions forcefully he is decidedly sane and moderate, being fully aware of the difficulties. Hygiene is not the only consideration; other conditioning factors of the mental make-up are important. The organism in its inception must be healthy, or hygiene is greatly handicapped. According to Professor Terman, eugenics as well as hygiene is essential. Not only are the factors above mentioned to be considered, but also "Many of the questions relating to this problem can never be settled until they have been attacked on a broad scale by systematic and scientific methods of research." With such an array of fact as is presented here and yet such moderation in forming conclusions, the careful perusal of this book can be strongly recommended to every teacher and administrative officer in public school work

DAVID MITCHELL.

NEWS AND COMMENT.

Vocational Evening Classes.

In Philadelphia, where the day continuation class has not as yet been developed, a movement has recently been set on foot to broaden and standardize the work in the evening schools, so as to make them more useful to the workers and the work. Through the Industrial and Technical Conference of the Public Education Association, which unites a number of the larger schools giving evening technical instruction, posters have been placed in all of the large manufacturing establishments and libraries in the city, calling attention to the value of further training for workers, and announcing the courses offered by the various schools. A folder giving more detailed facts about these courses has been distributed in large numbers among the same business firms, and combined advertising in the newspapers is another feature of the work of the Conference. The office of the Public Education Association acts as a clearing house for information in regard to evening school work throughout the city.

The Industrial and Technical Conference of the Association was formed in the spring of 1913, as a result of an effort to bring together educators and business men in an endeavor to get the schools better acquainted with each other's work, and to gain the cooperation of the employers of labor. It consists of representatives from the Y. M. C. A., Drexel Institute, Spring Garden Institute, Temple University, Wagner Institute, the Philadelphia Trades School, the public schools of Philadelphia and Camden, and the Public Education Association.

During last winter a series of luncheons was held under the auspices of the Conference, at which representatives of typical industries—engineering, the building trades, the metal trades, etc.,—met with prominent schoolmen and told them what the schools could do to help them in training men for their respective lines of work. A similar program has been planned for the coming winter to include a series of meetings, at which the various aspects of the training of the child for and in industry will be considered from the standpoint of the employer and the school. "Leaving school and entering industry", "Industrial opportunities for girls", "The high school graduate in relation to business", are among the topics to be discussed. At first the Conference limited itself to opportunities for men and boys, but this year it has enlarged its field to include the work for girls as well. A detailed survey of the opportunities offered in the various trades, and the qualifications necessary to enter them, with a study of how and where the desired training can be secured, is planned by the association to be undertaken in the near future.

Surgeon General Gorgas and the Nation's Greatest Need.

Under this caption Dr. Seale Harris in an editorial in the *Southern Medical Journal* for September warmly urges the creation of a national department of health with Gorgas as head,—a progressive movement for public hygiene which is being enthusiastically supported by health officers, sanitarians, and social service workers, as well as by physicians. "His work as Chief Sanitarian of the Canal

Zone having been completed," says Dr. Harris, "Surgeon General Gorgas has returned to Washington to assume his duties as Chief of the Medical Corps of the United States Army, to which he was recently appointed by President Wilson. . . .

"The greatest triumphs of medicine in the knowledge of men have been the elimination of yellow fever and the practical eradication of malaria from Havana and the Canal Zone, thus proving that those life-destroying and energy-sapping diseases, the most dreaded enemies to man in tropical and subtropical countries, can and will be conquered everywhere. These triumphs mean that millions will live in health, happiness, and unbounded prosperity in regions that are now sparsely inhabited and undeveloped because of the presence of these tropical diseases. Nothing in history is more inspiring than Gorgas' conquest over disease, and the good that he has done will rest like a benediction upon the inhabitants of temperate and tropical countries throughout the world. . . .

"It is estimated that several million people in the United States have malaria every year, and the annual economic loss is considered to be not less than \$100,000,000 from that disease. Yet if the same practical methods of malarial prevention, which were successfully carried out in Havana and the Canal Zone, were put into effect and continued for five years in our own country, malaria would become a rare disease in the United States.

"The American Medical Association, the Southern Medical Association, and practically every state, county, and city medical society in the entire United States have endorsed legislation for the creation of a Department of Public Health with a cabinet officer at its head. Efforts were made to enact such legislation during the administrations of Presidents Roosevelt and Taft, and though success seemed assured, the bills were defeated. The next session of Congress seems the most propitious time to present this most important measure to our national legislators. . . . During the interim of the sessions of Congress physicians should make the opportunity to inform their friends among the congressmen and senators of the needs for such legislation. If the medical profession will stand united on this question there can be no doubt that before another year Congress will have enacted the greatest possible piece of constructive legislation for the good of the whole people by providing for an adequate Department of Health. . . .

"Our government owes it to Gorgas to create a position of greater honor than has ever been filled by a sanitarian, or by any other member of the medical corps of the United States Army." Dr. Harris refers to the honors given Admiral Dewey after the battle of Manila Bay, and concludes, "Are not the achievements of Gorgas of greater service to our country and more far reaching in their effect in increasing national prosperity and happiness than any naval victory ever won? If so, Congress should show the gratitude of the people whom it represents by first making Gorgas a major-general in the United States Army that he may retire with that rank. Then it should perform the greatest possible service for the nation by creating a Department of Health, and the sincere desire to appoint the man who can give the best service in the position may be depended upon to lead President Wilson to select Gorgas as Secretary of Health."

The Psychological Clinic

Copyright, 1914, by Lightner Witmer, Editor.

VOL. VIII, No. 6.

NOVEMBER 15, 1914

A STUDY OF DEFECTIVE PUPILS IN THE PUBLIC SCHOOLS OF TACOMA, WASH.

BY ROBERT A. CUMMINS,
University of Washington.

The material herein set forth does not pretend to represent a particular study of any kind, therefore the reader need not expect to find a *solution* of any *specific* problem, much less a *determination* of any set of norms, nor yet a *revision* of any that have heretofore been published. While the writer is in hearty sympathy with the trend of modern scientific investigation in which, as a rule, some definite problem is mapped out and undertaken, it is also believed that some value might accrue from a study which starts out with no particular object in view, but simply to study the situation and record observations.

Consequently, during the winter of 1910-11, it was arranged through the cooperation of the superintendent's office¹ to undertake such a study of the ten pupils then in the special room of the Tacoma city schools, also the thirty boys then in the parental school, together with such others as might be brought to the psychological laboratory of the University of Puget Sound, where an Educational Clinic was established and a course offered for those who were preparing to teach. The period of the study continued throughout the balance of that school year and until the end of the following year.²

The writer was assisted in the work by five college students,³ who elected the course in Educational Clinic, the method of procedure used in the study being somewhat as follows.⁴

¹ The author desires to express his thanks and appreciation to Supt. J. C. Collicott and to Supt. William F. Geiger, for permission to carry on these investigations in the public schools of Tacoma.

² Beginning with January, 1912, three free public lectures were given at the city Y. M. C. A. on "The Educational Clinic and Problems pertaining to the Abnormal Pupil in the Public Schools." Also, at the request of the Teachers' Council of the city schools, an article was prepared on "Special Rooms in the Public Schools," and published in one of the city papers and also in the *Northwest Journal of Education*, the official organ of the teachers of the State of Washington.

³ Acknowledgment is due to C. W. Jones, William Olson, Marie Conney, Berna Miller and Helen Vent, all of whom rendered extra service in tabulating data, especial mention being due Misses Miller and Vent.

⁴ A brief description of tests used and apparatus employed is given in the appendix a, b, etc.

Together with an assistant we visited the special room and there examined all the pupils with the Binet scale of mental measurement, taking no less than thirty minutes for each pupil, carefully working *up* and *down* the scale and supplementing each test with incidental conversation designed to draw out the subject and secure the very best expression possible of mental intelligence. A number of subsequent visits were made in which the pupils were observed at their work and further personal acquaintance was gained with each subject. During these visits numerous informal tests (see *a* in appendix) of memory, imagination, judgment, emotion, etc., were given as well as some tests of attention and interest.

After the lapse of about a year complete anthropological measurements were taken and the Binet tests were again given, this time being supplemented in the case of certain individuals with the *form board*, *needle-threading*, and *de Sanctis* tests (see *b* in appendix). This was followed up by further testing done in the laboratory, where apparatus for making records, such as the kymograph, was available (see *c* in appendix).

The personal and family history of the subjects was obtained through the cooperation of the teacher and through direct interviews with some of the parents or guardians. This completed the data from which the graphic charts given below were compiled. If any merit attaches to the method used, it lies in its freedom from personal bias or preconceived pedagogical theories with reference to this class of pupils.

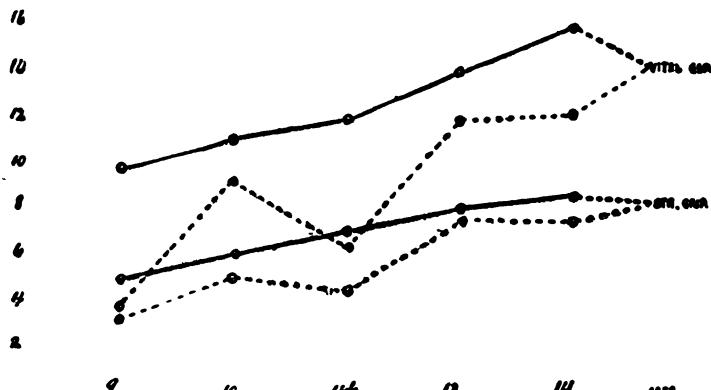


CHART I. PROGRESSIVE COMPARISON OF 10 FEEBLEMINDED PUPILS WITH NORMS.

Chart No. 1 represents a comparison, in respect to vital capacity and strength of grip, of the ten pupils in the special room with the norms for the same age and sex, the number of pupils of each age and sex as actually found in the room being paralleled by an equal number

of each age and sex taken from the table of norms. This study incidentally confirms the statement made by Dr. Henry H. Goddard, of Vineland, N. J., to the effect that, when measured on the basis of vital capacity and strength of grip, feeble-minded children show a *characteristic curve*. By reference to the chart the curves are seen to be characteristic in that there is a sharp declivity beginning at the age of ten, then a level beginning at about the age of puberty.

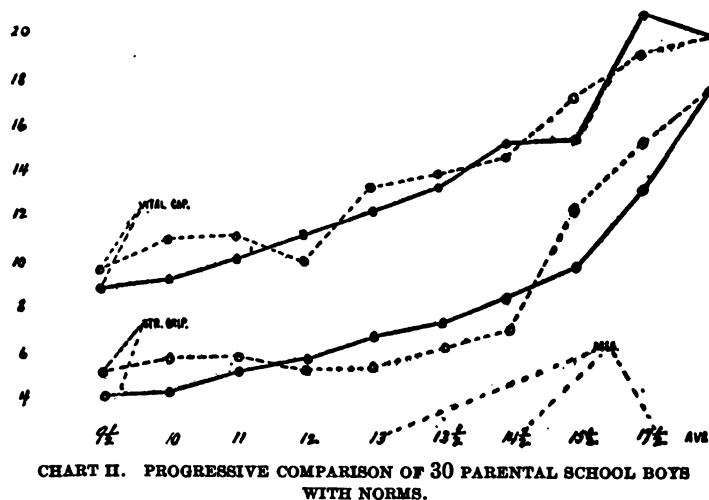


CHART II. PROGRESSIVE COMPARISON OF 30 PARENTAL SCHOOL BOYS WITH NORMS.

While the account of the study made of the thirty parental school boys is not included in this report, we desire to introduce here one of the charts from that study in order to point out one or two rather significant comparisons. Chart No. 2 shows a comparison of the thirty parental school boys with norms for the same ages for the traits, vital capacity and strength of grip. By reference to this chart it will be seen that the declivity does not occur until about one year later and it does not appear quite so sharp. Furthermore, at the beginning of puberty the curve does not strike a level as in the case of the feeble-minded. Upon the whole the curve for the feeble-minded is *sharply irregular* and always *below* the normal, while the curve for the parental school boys is only *moderately irregular* and varies *above* and *below* the normal.

Charts Nos. 3, 4, 5, 6, and 7 represent comparisons of individual pupils of the special room with norms for the same age and sex. The scheme of charting used was devised as a convenient form for representing in a graphical way the comparative status of the subject, when considered upon the basis of twenty-five traits, as follows:—age, weight, vital capacity, vital index, height standing, height sitting, correlation of sitting with standing height, head girth, head

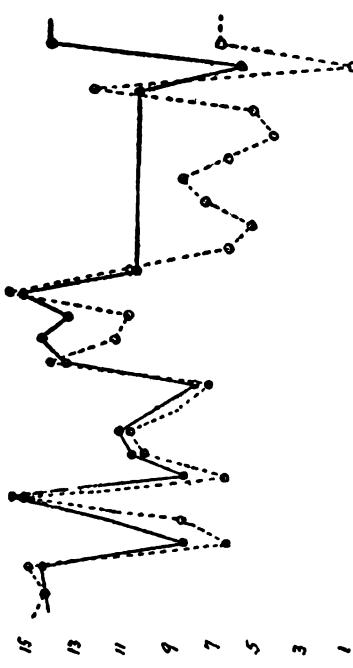


CHART III. . . . PUPIL IN SPECIAL ROOM.—NORMS FOR SAME AGE.

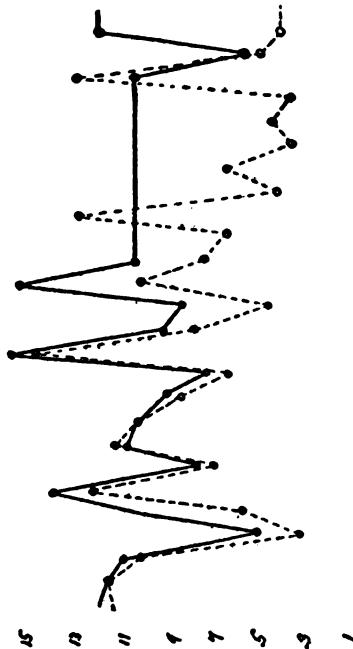


CHART IV. . . . PUPIL IN SPECIAL ROOM.—NORMS FOR SAME AGE.

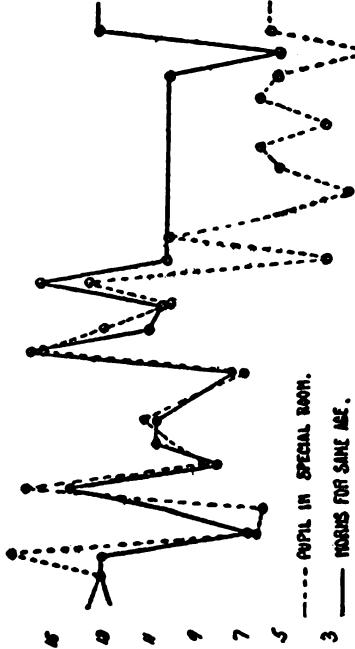
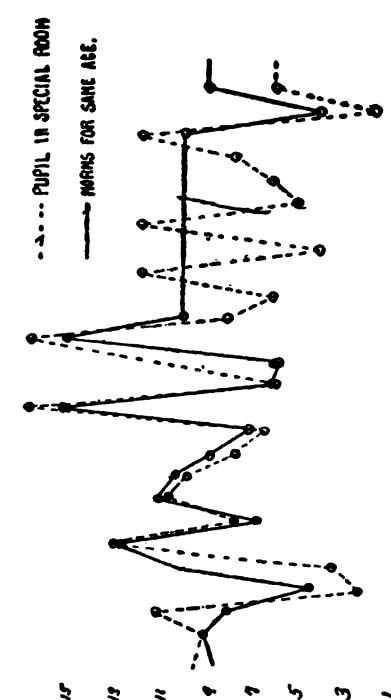
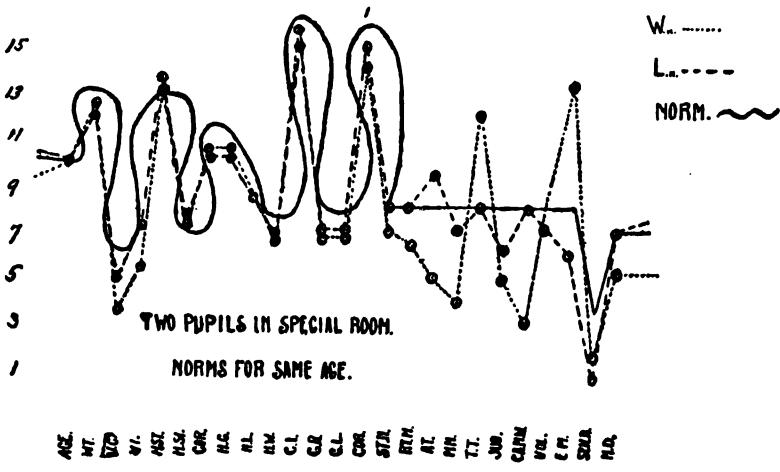
PUPIL IN SPECIAL ROOM.
— NORMS FOR SAME AGE.AGE
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1

CHART VI.

AGE
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1

CHART V.

length, head width, cephalic index, grip right hand, grip left hand, correlation of grip for right with left hand, steadiness of nerves, rate of movement, attention, memory, train of thought, judgment, capacity for mental work, volition, emotions, school age, and mental development (see *d* in appendix).



In the more particular studies, as those given below, further analysis was made of some of the traits; for example, steadiness of nerves was tested for holding, aiming, and tracing; attention was analyzed into three forms, voluntary, *nonvoluntary*, and *involuntary*; memory was studied as impression, retention, and recall; judgment was tested as *aesthetic* and *rational*; capacity for mental work included capacity for physical work as tested by the dynamometer in the case of muscle fatigue.

It is interesting to note that, while pupils of this type as a rule always fall below the normal in respect to vital capacity and strength of grip as well as in most of the other physical measurements, when it comes to the mental traits they appear to fall into two rather well defined groups or types, which might be conveniently termed the "suppressed" type and the "excitable" type. Chart No. 5 represents one of the "suppressed" type, while charts Nos. 3 and 6 represent the "excitable" type. The further fact was noted in the study, *viz*—that the transition, due to the growth of the subject, from the "suppressed" to the "excitable" state is usually effected through the change of the traits *attention*, *emotion*, and *train of thought* in the order named, while on the other hand, if the transition is from the "excitable" to the "suppressed" it is usually manifested by the *failing* of the powers of *attention* first, which is followed by a *breaking up* of the

train of thought and lastly a condition in which it is *difficult to arouse emotion* of any kind. Chart No. 4 represents a transition from the "excitable" to the "suppressed" state, in which attention and train of thought are already suppressed below the normal, while in respect to emotion the subject is still somewhat more excitable than the ordinary pupil. During the time of our observation, which extended over a period of about one and a half years, the change in this subject was quite marked, as was also the change, but in a reverse order, in the case of subject No. 3. Subject No. 3 was observed to be growing more and more excitable. She gave strict attention to whatever was directed to her. Not only this, but *any* conversation in the room immediately aroused her curiosity and drew her attention away from whatever else she might be doing. In the case of the subject represented by Chart No. 6 not only were her attention and emotion easily aroused, but she persisted in talking glibly all the time. This was literally true, as she would not wait for any one to give attention, but even when we were engaged in conversation with the teacher this pupil would come up near by and begin to tell something which she had seen or heard.

Chart No. 4 represents a fairly typical case of which many are to be found scattered throughout our public schools, and the following brief account of the treatment of the case is offered as representing something of the kind of service that is destined to be rendered in a constantly increasing measure by the Educational Clinic:

The subject was first brought to the laboratory by the parents at the suggestion of the superintendent's office. About two hours were spent in the preliminary examination, after which the subject, together with the parents, was ushered out without our giving any statement of the findings whatever, notwithstanding that the parents evidently had expected to hear a *full* and *final* report on the case forthwith! A few days later a visit was made to the school where the subject was in attendance and there he was observed at work among the thirty odd other pupils in the room, all of whom were from four to six years his junior in age. This was the regular 2-B grade, ages from seven to ten years, the subject at this time being thirteen and a half years of age. Next the family history was obtained from a sister of the mother of the subject, then the family physician was consulted, and after several weeks had passed by, the subject was again called to the laboratory, this time alone, when a more thorough examination was made, a number of records, such as voluntary and involuntary reaction, fatigue, steadiness of nerves, etc., were taken and the Binet tests were again given, supplemented by the form board and the needle-threading tests. A complete history of

the case was then obtained from the mother and finally, after a period of some six weeks altogether had elapsed, an appointment was made with the parents to talk over the matter in the home. It perhaps should be stated here that the subject was an only child, who had inherited a neurosis through the mother's side of the house, and the mother had allowed herself to grow up, so to speak, with the child, gradually becoming set in the belief that he was not abnormal to any extent beyond what might ordinarily be termed "dull," and consequently the parents had held the teachers chiefly responsible for the retardation of the boy. Then too, as was pointed out, they had moved about from place to place quite a good deal, and in the estimation of the mother this was a contributing cause to the retarded condition of the subject. Our problem as we had mapped it out was two-fold,—first, to break through this shell of false belief with reference to the real condition of the boy, and in the second place to overcome, if possible, a strong prejudice against the proposal to send her boy to a special room.

On the evening of the appointment the mother desiring that the boy appear at his best, had kept him in after dinner instead of allowing him to go out to play as was his custom. Anticipating some such action on the part of the parents we purposely delayed our going for more than an hour beyond the time appointed, hence, instead of being at his best, the subject was wrought up into a high state of nervous tension, augmented all the more by the fact that he had not been told just why he was being kept indoors. This state of affairs upon our arrival furnished the opening wedge for breaking through the shell of false belief referred to above.

In the course of our conversation we endeavored to enforce three points, the first two being with reference to the diagnosis of the case and the third with reference to the treatment of the case. In the first place we endeavored to impress upon the parents the *status præsens* of the boy, together with the improbability of his ever growing out of it, or being any better. In the second place we pointed out the absolute inconsistency of spending another seven years in the vain hope of seeing him advanced possibly another grade or so in the regular classes. (The teacher, according to her own testimony, had advanced the boy into the 2-B grade chiefly in order to keep peace in the family.) And lastly, we endeavored to prevail upon the parents to send their boy to the special room. This last appeal was made not alone from the standpoint of the good of the subject himself, but also and perhaps in a larger sense more so, from the standpoint of the welfare of the thirty odd other pupils, who were in the same room with him.

Having delivered our message we took our leave with a feeling

that little or nothing had been accomplished. On the following Monday we happened to be at the superintendent's office talking over the possible attitude of the administration upon such cases in the event that the parents persisted in keeping the boy in the regular room, when a message came over the telephone from the special room stating that a certain pupil was there, coming from a school in the north end of the city, and that he desired to enter the special room. The transfer was promptly given by the superintendent, and our subject, for it was he who was sent to the special room, was thus assured the very best care and opportunity for future development that the system of public instruction affords, and at the same time a rather perplexing problem was solved for the teacher of the room from which he came.

THE TICKET PUNCH OBSERVATION.

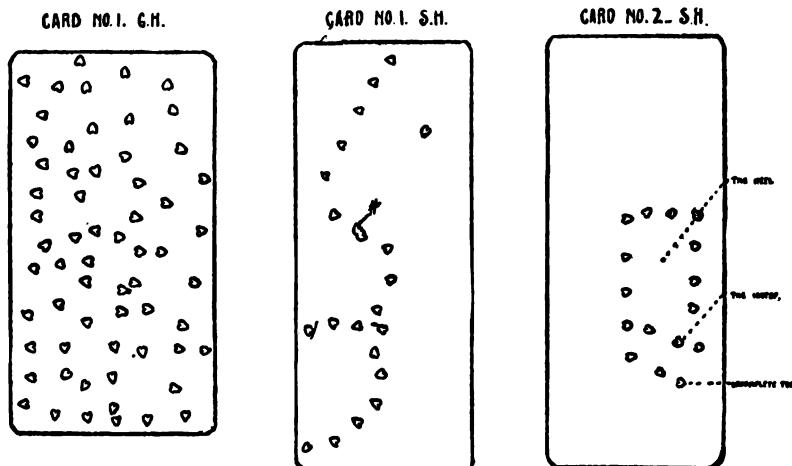
In addition to the study made of the special and parental school classes mentioned above, a number of other pupils of varying ages and degrees of mentality were brought to the laboratory for examination and treatment. During the course of these interviews and examinations a number of rather interesting and, as the writer believes, significant discoveries were made, some of which we beg to present for the consideration of others who may have occasion to engage in similar work.

Having previously procured a number of ordinary ticket punches to be used for another purpose, it occurred to the writer that such an article would be a splendid thing to use in connection with these examinations in order to work up the curiosity of the subject and thus to overcome timidity, which is very marked in the case of many of these feeble-minded and retarded pupils. Accordingly two of the ticket punches were selected, one heart-shaped and the other diamond-shaped. These punches, together with as much of the Binet apparatus as was practical, were carried in the pocket and were usually introduced incidentally soon after the subject entered the room and if possible while in general conversation with the parent or other person who had accompanied the subject. In case the examination was to take place at the public school, as frequently happened, we usually introduced the ticket punch while in conversation with the teacher in the presence of the subject. A real explanation of the use of the punch interested the teacher and almost invariably aroused the curiosity and interest of the subject. By a skilful punching of heart-shaped holes in an ordinary visiting card, either by a very rapid movement, or by the making of some familiar design as an animal or even a shoe, the interest and curiosity of the subject was still further

aroused, whereupon a finished card was handed to the subject and presently the punch was handed to him with the simple words, "Can you do that?" This attention to the subject is only incidental and he is allowed to follow his pleasure for a few minutes while the examiner continues conversation with the other person. After a little while the examiner asks the subject how he is getting along, whereupon the average subject of this kind will initiate a conversation. From such a beginning it is comparatively easy to pass to some other of the regular tests given by Binet.

It is claimed that by means of the ticket punch, when properly used, one may determine to no small extent such traits as constructive ability, symmetry, completeness, motor coordination of eye and hand, capacity for mental work, and visual memory. The following cases are offered as being typical in representing the use of the ticket punch in clinical examinations of subjects who are older:

A sixteen year old boy, designated as G. H., was given a ticket punch together with a card. After some little practice he was handed another card and was asked to make some design, anything he wanted to, to make it just as complete as possible, just as good as he could, in other words, to finish the job. Below (No. 1-G. H.) is an exact copy of the card.



The subject's capacity for mental work was shown to be subnormal by the fact that it was found necessary to prod him continually in order to keep him at the task after the first three or four minutes of work. This lack of capacity for mental work did not appear to bear any direct relation to the subject's idea of completeness, however, as he could not be induced to say that the job was

done until after it had been shaped according to his notion of completeness. It will be seen by comparison that this card is very much more complete as well as more symmetrical than is card No. 1-S. H. The hole marked with a "#" represents an error in coordination as the subject was observed to try to erase it and was heard to remark to himself "pshaw".

Another fifteen and a half year old boy designated as S. H., was given a ticket punch, together with a card, and after some little practice was also given another card and asked to make something, anything he could make the easiest, to make it as complete as possible, to finish the job. The subject worked faithfully at the task for a period of ten minutes during which time the following conversation took place. Examiner.—"What are you going to make?" S.—"You don't need to know." E. (Always after a long pause).—"What are you making?" S.—"You'll see when I get through." E.—"What are you making, a house?" S.—"You'll see when I am through." E. (Purposely repeating the same question).—"What are you making, a *house?*" S.—"You'll find out when I get through." E. (After longer pause).—"Are you through?" S.—"You'll see when I am through." E.—"What are you making, a *ticket?*" S. (Rather sharply).—"You'll know, I told you, when I'm through." E. (When S. had ceased to work).—"Are you through?" S.—"Yes, I'm through." E. (Taking the card).—"What is it?" S. (After short pause, smiling).—"Why that's a ticket." (Note that the examiner made two suggestions, the latter being effective.)

Above (No. 1-S. H.) is an exact copy of the card as finished by the subject. The examiner then proceeded to punch the design of a shoe sole, or track, and after some comments upon it the subject was asked to make one like it. He was given another card, but incidentally the one which the examiner had prepared was hidden from view so that the subject was thrown upon his visual memory. No. 2-S. H. is an exact copy of the second card as finished by the subject. From these three examples it may be seen that subject S. H. possesses a greater capacity for mental work, but at the same time is much less highly developed in point of symmetry and the sense of completeness than is subject G. H.

We append also the complete charts for these two subjects, together with a copy of the preliminary report which was given in the case of S. H. Similar charts and reports were made out for all those brought to the laboratory, a copy of each being sent to the parents or guardian, to the superintendent's office, and to the teacher in case the child was in attendance at the public schools.

APPENDIX.

Report of preliminary examination of subject, S. H., aged fifteen and one-half years, of the city of Tacoma, Washington, examined at the laboratory of the Educational Clinic, of the University of Puget Sound, on October 28, 1912.

Physiological age.—Fifteen and one-half years.

Pedagogical age.—One year.

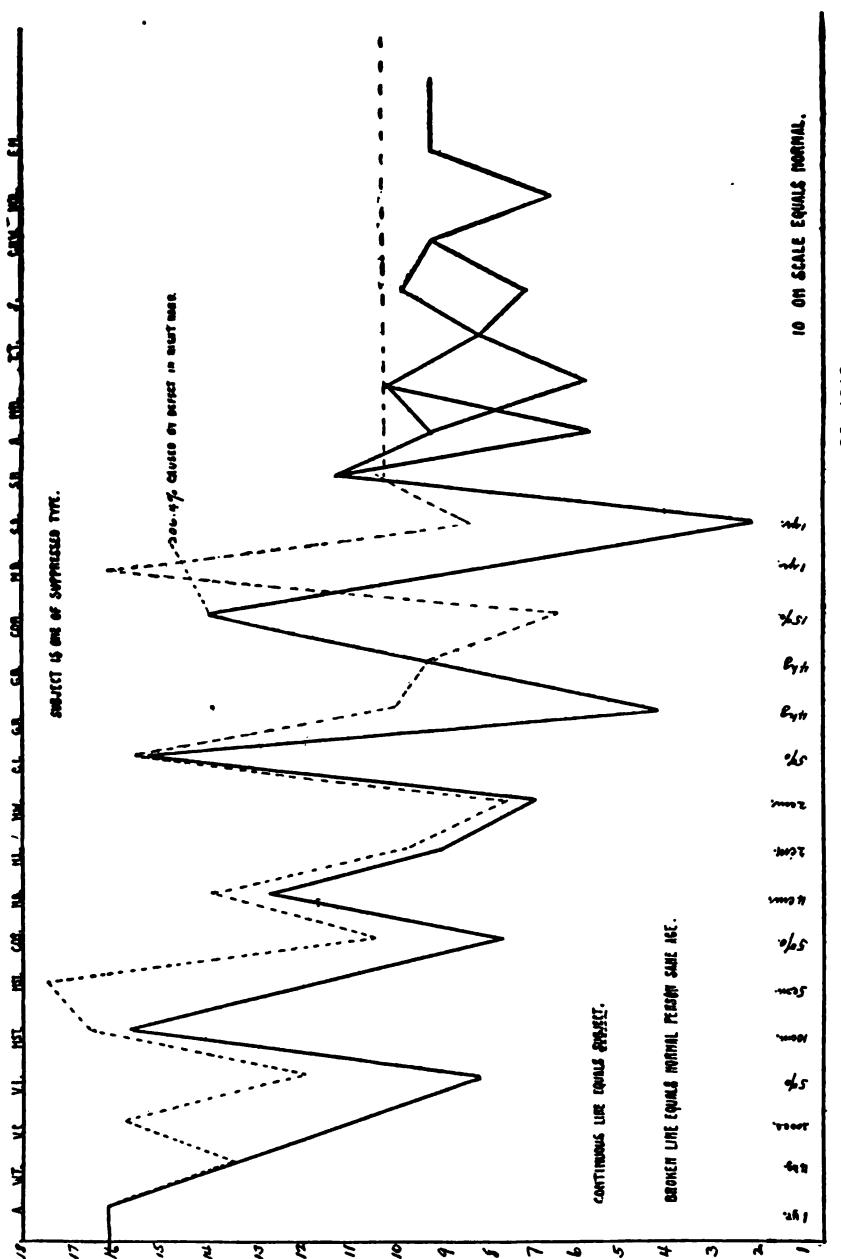
Degree of mental development.—That of an eight and one-half year old child.

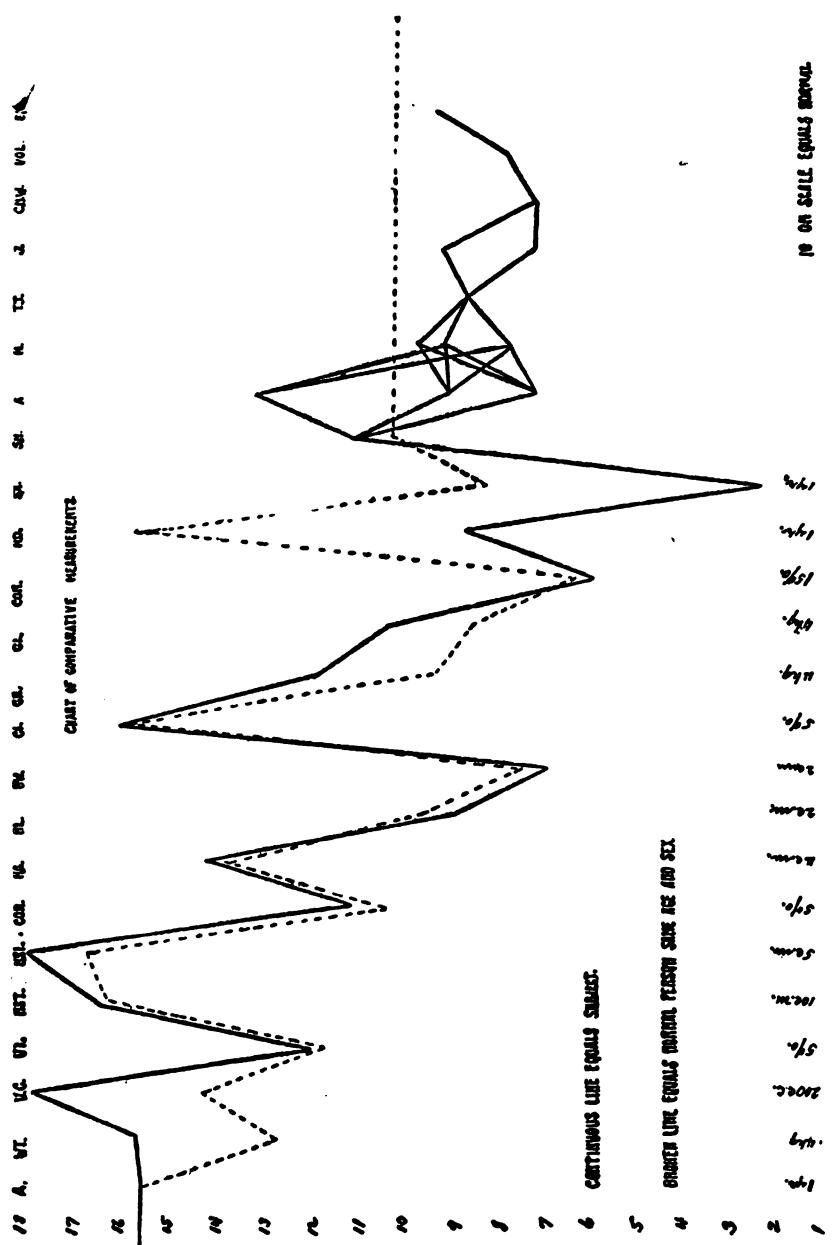
Anamnesis of family. On the father's side, the father was killed in the army, the mother died at about 76. One brother and one sister. On the mother's side, both parents died at about 69. Three brothers and one sister living, one sister having died at the age of 35. Subject has one sister living, aged ten years, and one sister who died at the age of four years with spinal meningitis, probably caused from measles and lack of nourishment.

Personal history.—Subject is the eldest of three children (see above), was of normal size at birth. Conditions at time of parturition were normal excepting that delivery was unusually laborious. No irregularities were observed until at the age of about six weeks when the subject suffered from a fall which affected his head causing considerable swelling. Subject has never attended school very much, hence has not attained much in the way of pedagogical learning. Has always manifested a halting nervous tendency in his effort to talk, being delayed more than three years beyond the normal time when a child should ordinarily learn to talk.

Anamnesis of the case.—From the time intelligence began to manifest itself marked tendencies of inability have been observed, chiefly with reference to learning to talk, which no doubt caused a delay of all the mental processes. In general the case appears to be one of gradual lagging behind in point of mental development, while in point of physiological development the subject has gone beyond the normal person of the same age.

Status præsens.—The examination shows the subject to be above the normal for one of his age in respect to weight and vital capacity, height both standing and sitting, with the greatest irregularity in the case of sitting height. In point of head measurement, the girth is *super*, while the length and width are both *subnormal*. As tested by the Binet scale of measurement the subject has the mental development of an eight and one-half year old child, which would put him in the class commonly designated as *morons*. In respect to





steadiness of nerves, the subject appears to be above the normal. In respect to attention, the large majority of his actions fall under the head of *non-voluntary* attention. As is usually found to be the case with subjects of this class the *aesthetic judgment* is much more highly developed than is the rational judgment. The subject is designated as one of the "suppressed" type, requiring in practice that all his activities be constantly prodded in order to keep him at his work.

(a) *Informal tests employed.* *For memory.*—Examiner exhibits some piece of apparatus, as for example, set of wooden cubes, and asks subject whether or not he has seen them before. E. asks S. when he last visited the room. E. exhibits pictures or photographs and asks S. whether he recognizes them. E. exhibits piece of gum or candy and offers to give it to S. if he will say from memory a certain sentence. (E. makes up sentence, concerning the candy, very much longer than test sentences for one of S.'s age).

For imagination.—E. makes up imaginative story of what he saw on the way and asks S. to do likewise. (S. No. 3 would invariably make up fanciful stories.) E. exhibits some of the standard ink blots and asks S. what they look like. E. asks two of the subjects to dramatize "The Hare and the Tortoise," or "Jack and Jill." E. tests for various kinds of imagery, as visual, auditory, gustatory, motor, tactile, etc.

For judgment.—E. says to S., "Suppose the house should get on fire what could we do?" E. exhibits some article, say a book, and asks S. to tear off from a large sheet a piece of wrapping paper big enough to wrap the book. E. places a thin board on two supports and asks S. whether he thinks the board strong enough to hold up E. E. exhibits a Chinese doll and an American doll and asks S. which is the prettier. (In our experience we have found that the average feeble-minded child is more or less confused by the use of the comparatives).

For emotions.—E. relates pathetic story to teacher in presence of S. E. displays American flag and relates war stories. E. sharply reproves S. without cause. E. reflects upon the honesty of some relative of S.

For attention.—E. introduces the game of "Simon says thumbs up." E. displays picture card with pasteboard form pictures of various things, as bird, dog, doll, gun, watch, boy, pony, automobile, etc.

For interest.—The last-named test was also used as a means of determining the native interest of the subject.

(b) *The form board, needle-threading, and deSanctis tests.*—The form board used was the one designed and used by Dr. Henry H. Goddard. In our work in Tacoma we found this an excellent means of determining the general state of nervous control, the sense of completeness (see in this connection our description of the ticket punch observation), capacity for mental work, and other like traits.

The needle-threading test was also devised by Goddard and was used by the writer to test capacity for mental work, steadiness of nerves, as well as degree of attention.

The deSanctis test is described in Whipple's "Manual of Physical and Mental Tests." The large card containing geometrical figures was used alone to test degree of attention, being similar in principle to the "cancellation tests."

(c) The kymograph was used for making records of *tapping*; steadiness of nerves, *holding*; muscle fatigue, *gripping*; reaction time, *sight* and *sound*; attention, *shifting*.

(d) *Complete chart.*—Age—taken in years and half years. Weight—taken in kilograms. Vital capacity—taken in cubic centimeters, wet spirometer being used. Vital index—ratio of weight in kg. to vital capacity in cc. Height standing and sitting measured in centimeters. Correlation—taken in percentiles. Head girth, length and width taken in metric measurements with anthropometric tape and head calipers. Cephalic index—the percentage of the length which the width represents. Grip right and left hand—taken with Smedley dynamometer. Correlation—the percentage of the right hand strength which the left represents. Steadiness of nerves—measured with steadiness tester, and sometimes, in case of older subjects, by aiming. Rate of movement—measured by tapping. Attention—in case of younger and all badly defective subjects, determined by use of deSanctis geometrical chart. In case of older and less badly defective subjects, determined by cancellation tests. Memory—rote memory and logical memory were tested by use of digits and sentences, and meaningful prose selections. Impressibility was tested by giving subject a piece of memory stuff to learn. Retention was tested by reference to previous experiences of subject. Recall was tested by requiring subject to reproduce previously learned material. Train of thought—tested by number of words subject could say in given time, say five minutes. Also as to regularity by a study of the list of words given by subject in free association. Whether based upon ideation or sensation, by observing subject when producing list of words and comparing list with objects in room. Judg-

ment—tested by Binet's set of pictures for aesthetic judgment, and for rational judgment, by problems of situation requiring "what to do" solutions (see under *a* above). Capacity for mental work—in case of younger and badly defective subjects the form board and the de Sanctis geometrical chart were used, while in the case of older and less defective subjects, the juxtaposed triangle test and the ticket punch test were used. A very simple yet rather effective test was to require subjects to cut all the leaves in a new book. (This has the advantage of being a *real* problem, and when introduced incidentally, has been found a splendid test of capacity for mental work even for normal adults.) Volition—for this determination we depended chiefly upon the information received from the teacher and from the parents. (For example in the case of a certain subject the mother stated, "Ever since he was old enough to walk and talk it seemed to upset his temper every time I asked him to do anything, especially if he happened to be occupied at something else at the time." This would seem to be pretty conclusive proof of a case of *precipitate* will. Again, in the case of another subject we found it impossible, even after repeated visits to the room, to induce her to blow in the wet spirometer. As a last resort all the pupils in the room were lined up, with the above-mentioned subject last in the line, and required to pass by the "machine" and to "give it a big blow." Our subject *would not* even then. Finally the subject was placed in the middle of the line and in that way was half induced, half coerced, to consent to the treatment. This would seem to indicate rather clearly a case of *obstructed* will, and especially since the same was found to be true with reference to practically all of her work.) Emotions—in the case of younger and badly defective subjects, the tests described under *a* above were used, while in the case of older and less defective subjects measurements were taken by means of a galvanometer connected in a circuit of two dry batteries with the subject. Considerable experimenting was done with this test in order to reduce to a minimum the irregular physical contact with the electrodes. A form of brass electrode was devised which came in contact with the hand diagonally across the palm, the shape of the electrode being almost round with rather deep grooves cut crosswise on the top side. It was observed with the use of this form of electrode that, when on account of emotion the subject would move different parts of the body, the contact with the electrodes remained so nearly uniform as not seriously to affect the current by increased or decreased pressure area as was the case with the flat electrodes. The subject being thus placed in the circuit a series of varying stimulations were applied, such as the recitation of poetry of different sentiments, as

Dickens' "Christmas Carol," the selection entitled "Rienzi to the Romans," "An Order for my Mother's Picture," or one of Riley's poems; arousing the emotion of apprehension or fear by the skilful relating of exciting adventures; the singing of college songs accompanied by piano in an adjoining room without announcement; sharp rebuke in presence of others (this usually aroused the emotion of anger). A strange unexpected noise in the room, as a shrill whistle, the dropping of a heavy weight, or the sudden rushing of some one into the room usually affected the most composed subjects, immediately after which the needle on the galvanometer would show a deflection of from two to four degrees above the "rest" reading. School age—computed on the basis of the findings of Ayres, *i.e.* that the average pupil completes the eight grades in about ten years. For example, a normal or average pupil at the age of seven would have a school age of one minus, a pupil at the age of eleven would have a school age of just four, etc., whereas some subjects at the age of eleven were found to have a school age of only two, and two of the subjects in the special room at the age of sixteen were found to have a school age of less than two years. Mental development—this trait was determined by the application of the Binet scale of measurement for mental intelligence.¹

¹ The original charts representing these and other studies of individual differences are now in the exhibition room of the School of Education of the University of Washington. They were made on a good grade of window shade material 30 by 40 inches, with three heavy leather eyelets placed on the top edge of each chart. Open and shut metal rings about 2 inches in diameter were placed in these eyelets, thus holding together as many charts as might be desired for any particular occasion. In using the charts for illustrating the lectures which were given, they could be conveniently turned back over an easel, or by dispensing with the rings and providing three metal pins about 4 inches long placed at the proper distance apart on the wall or on a cross piece fastened to the top of the easel, the charts could be all hung on the pins and removed one at a time during the course of the lecture. There are more than twenty of the charts altogether, including the author's illustration of Professor Thorndike's statement—"If the scale of measurement is made fine enough no two persons are alike in any trait." There is also in the collection a complete compilation, in so far as data were obtainable at the time, of all the norms for physical traits of boys and girls.

This compilation included the harmonizing of the tables by figuring them all out in terms of the metric system, and calculating the half years in cases where this had not been done by the author from whom the norms were taken. These norms were thus compiled, harmonized, and filled in for both boys and girls from the age of six to eighteen years. This piece of work was done by Miss Vent in connection with a second course in Educational Clinical Work, and was found most convenient as a working tool in the making of comparative charts.

THE HYGIENE OF EUGENIC GENERATION.

By J. E. WALLACE WALLIN, PH.D.,

Director Psycho-educational Clinic, St. Louis Public Schools.

(Concluded.)

Of 57 children of 10 alcoholic families, only 15 per cent were entirely normal, while of 61 children of 10 non-alcoholic parents 82 per cent were entirely normal. Eighty-five per cent of the alcoholized progeny were idiots, epileptics, choreics, dwarfs, deformed, or died in early infancy (Demme). A study of about 20,000 children from 5846 families indicated in general that the percentage of miscarriages and deaths varied with the amount of alcohol consumed (Laitenen). On the other hand, it has been shown that the number of deaths and miscarriages has decreased as national sobriety has increased (English study).

The vitality or chances for survival are less for the children of later pregnancies of maternal inebriates. Thus the mortality among the first born of a certain group of alcoholic mothers was 33.7 per cent as against 72 per cent among the sixth to tenth born; while the number of still-births among the first born was 6.2 per cent as against 17.2 per cent for the later pregnancies. The injury which alcohol exerts upon the generative processes apparently increases with time.

Both paternal and maternal alcoholism imperil the ability of mothers to nurse their offspring. Of the daughters of a given group of confirmed topers, only 21 per cent were able to nurse their babies. In a group of non-habitual drinkers, 50 per cent of the mothers retained their nursing capacity, while only 2.6 per cent of daughters of confirmed paternal drinkers were able to lactate (Bunge). Whatever impairs natural nursing is of moment to eugenics, owing to the vital relation of breast feeding to the normal growth and development of the infant.

In a German investigation covering the first five years of the children's lives, it was found that not a single death had occurred among 109 breast fed children from 24 families, while during the corresponding period every one of 33 families in which the babies were all bottle fed had lost one or more infants. In another group of 29 families with 85 breast fed infants and 109 bottle fed, all the breast fed were alive at the end of eleven years, while 57 per cent of the bottle fed were dead. A third group of 13 families con-

tained 48 breast fed infants, all alive at the end of ten years, and 23 bottle fed babies, all dead at the end of the same period. In certain districts in Austria where mothers are accustomed to giving the babies the breast, from 16 to 17 out of every 100 born alive die during the first year, from 6 to 7 die during the first month, while the number of still-births is from 9 to 15 per 1000. In other districts (apparently industrial) where breast feeding is abandoned during the period from the first to the fifth month, the mortality is from 18 to 23 during the first year, 6 to 8 during the first month; while the still-births number from 20 to 41 in 1000. The mortality among breast fed infants less than nine months old which came under the supervision of the Board of Health of New York City in 1907 amounted to 25 per cent, while the mortality among the artificially fed was 74.9 per cent. Of 3000 infant deaths in Birmingham, the rate for the breast fed was 8 per 1000, while for the artificially fed it was 252. One authority estimates the mortality of the bottle fed as three times that of the breast fed (C. L. Wilbur), another from eight to ten times (Collins H. Johnston) and a third fifteen times. While there has been considerable improvement in the art of artificial feeding within recent years, and while the decrease in the mortality of nursing babies cannot be wholly due to the influence of the mother's milk but to favorable factors which go with nursing but do not go with bottle feeding, there is no doubt that the milk of the mother is the natural food for the baby. The mother's breast is not only the best instrument at our command for combatting fatal issue, but it is the source of the prime nutritive elements upon which to rear a strong and hardy stock. There is no specific superior to the mother's milk as a prophylactic against acute infectious diseases, intestinal catarrh, scurvy, rickets, marasmus, soft teeth and bones, and retarded development. Breast fed babies grow more rapidly than bottle fed, the former doubling their weight at the end of the fifth month and trebling it at the end of the twelfth month, while the latter require a year to double, and treble only in the course of the second year.

These truths need to be dinned into the ears of the motherhood of America, for there has been a growing tendency for years to substitute artificial feeding for natural nursing, particularly in the centers of congestion. In the majority of cases the reluctance of mothers to nurse their babies is due purely to social and psychological causes; to a combination of indolence, selfishness, the desire to pursue pleasure at all hours, in and out of season, in drawing rooms, theatres, teas and clubs and the shirking of any duty that interferes with the regular satisfaction of such desires; and, finally,

subservience to the *Zeitgeist*: the apish adherence to the conventions, fads and fashions of the day no matter how trivial, ridiculous, barbarous or eugenically indefensible. Presupposing hygienic preparatory care, it rarely happens that mothers are physically incapacitated from nursing their offspring. To uproot, in a measure, some of these noxious psychic weeds, maidens who look forward to assuming the function of maternity should be given courses in young motherhood classes on the hygiene of infant feeding. They should be taught that one of the effective ways to kill, maim, or impair the lives of many infants is to feed them at the bottle, that artificial feeding is eugenically and morally indefensible, unless breast feeding is contraindicated, and that the only contraindications in the mother to nursing are certain cardiac disorders, eclampsia, nephritis, serious anaemia, tuberculosis, pregnancy, prolonged infection, and possibly various acute infections, epilepsy and insanity. Personally, I believe that a race of naturally nursed people will, all in all, be more eugenically fit than a race of artificially fed people. I am not sure that unwilling mothers can be legislated into hygienic practices by the imposition of fines upon those who can but will not nurse their babies, and I would advocate the enactment of such laws only as an extreme measure. But I do feel that the eugenic appeal should be presented and that, if properly presented, it cannot fail to stir countless mothers to perform more conscientiously their physical duties to their dependent offspring.

The weight of evidence seems to indicate that parental alcoholism may produce at least a certain amount of mental and moral deficiency, disorder or degeneracy in the offspring. The rôle of the alcoholic factor, however, is very differently estimated by different investigators and various surveys have given flatly contradictory results.

Forty per cent of the pupils in the special classes for deficient children in London and Birmingham were found to have intemperate parents, while the corresponding per cent for pupils of the same age in the regular classes was only 6 per cent. In another inquiry 32 per cent of school children doing satisfactory work were found to have alcoholic parents and 68 per cent abstaining parents; while 85 per cent of the pupils doing unsatisfactory work had intemperate parents and only 15 per cent abstemious parents. Of 6624 pupils studied in 1901 in the New York schools who had alcoholic parents, 53 per cent were laggards ("dullards, very deficient and deficient"), while only 10 per cent of 13,523 children of abstaining parents were laggards. The alcoholic habits were traced through three generations for 3711 children. In the families which were free from

alcoholic taint, 96 per cent of the children were proficient while 18 per cent had some organic or nervous abnormality and only 4 per cent were classed as laggards. On the other hand, in the alcoholically tainted families, 77 per cent of the children were dullards, 76 per cent had nervous or organic disorders, while only 23 per cent were proficient (Alexander MacNicholl).

In an academy in Utah the students of narcotized parentage required about one year longer to graduate from the grades and averaged one year and seven months older in the academy than their classmates (J. E. Hickman).

The percentage of parental alcoholism found in the study of 1200 English institutional feeble-minded cases varied from 13.2 per cent (Royal Albert Asylum) to 19.5 per cent (Darenth,—Shuttleworth and Beach); 7.7 per cent of 250 defective children in Manchester gave a marked alcoholic history while no other factor was discernible in 1.9 per cent of the cases (Lapage). A very careful investigation into the family histories for three or four generations of 150 cases living in and around London showed paternal inebriety in 46.5 per cent of the cases, although five-sixths of these showed a prior neuropathic heredity (Tredgold). A comparative study of the family histories of 250 mentally defective and 100 normal children in Birmingham indicated alcoholic parentage for 41.6 per cent of the former and 22 per cent of the latter group. Parental alcoholism was found in 62 per cent of 1000 French 'idiots' (Bourneville), in from 50 to 60 per cent of one group of Norwegian idiots (Dahl), in 3.7 per cent of another Norwegian group (Karl Loft) and in 11 per cent of German (Kind) cases investigated. Of 800 feeble-minded cases in a Pennsylvania institution, 14 per cent gave a history of chronic alcoholism in one or both parents (J. M. Murdoch). In other American investigations, the per cent of parental alcoholism has been found to be 38 per cent (Kerlin) and 50 per cent (Howe).

It is reported that in some wine-growing cantons in France and in wine-growing districts of Austria the schools have been flooded with an army of laggards seven years after good wine years. In a study based on 8196 feeble-minded children in Switzerland, the conception in the majority of cases took place during the periods of greatest debauch (New Years, the Carnival and the grape harvest: Bezzola).

Parental alcoholism, it is alleged, produces more epilepsy than parental epilepsy itself. Thus in a group of 572 epileptics, 15 per cent showed parental insanity associated with epilepsy, while 17.5 per cent showed parental intemperance (Echeverria). In another

study 30 to 40 per cent of the children of inebriates were epileptics (Molli). Of 150 insane epileptics in the Salpêtrière, 60 per cent had intemperate parents; of 200 descendants of 90 alcoholized parents, 75 per cent were epileptics who were mentally degenerate before the seizures became established (Alfred Gordon). While an American investigator (Sprattling) found that 16 per cent of 1000 institutional cases of epilepsy had epileptic parents and only 14 per cent inebriate parents, a French investigator (Dejerine) found that 51.5 per cent of the child epileptics investigated showed alcoholic parents, while only 21 per cent showed parental epilepsy; and a German investigator (Binswanger) found chronic parental alcoholism in 21 per cent and parental epilepsy in only 11 per cent of the cases studied. Moreover, a first and only alcoholic debauch on the part of the father at the time of conception is said to have been the causative factor in seven cases of epilepsy recently studied in Philadelphia (Matthew Woods).

That mental defectiveness and alcoholism are frequently associated admits of no doubt. But there is considerable diversity of opinion as to whether the antecedent condition is alcoholism or mental defectiveness. The Galton workers strenuously maintain that the causative factor is defective, neuropathic heredity, and that inebriety is merely the effect. All careful observers of mentally degenerate stocks know that degenerates manifest an excessive propensity for alcohol—a sort of hereditary alcoholic diathesis—as well as an extreme susceptibility to its demoralizing influence. But this tendency must itself be explained. May it not be that ultimately the alcoholic tendency of degenerates is resolvable into the alcoholic habits of generations of ancestors?

Not the least pernicious accompaniment of parental alcoholism is the drugging of children with alcohol by parents who are addicted to its use. Of large numbers of children investigated in New York 27 per cent of those rated "good and prosperous" as against 50 per cent of those rated "poor" consumed some form of alcoholic beverage. Only 30 per cent of the good pupils had drinking parents as against 85 per cent of the "poor" (MacNicholl). Small quantities of wine administered experimentally to 20 children between six and fifteen years of age produced mental impairment after its use (Maurice Kende). An examination of 591 Viennese school children showed that the best scholarship certificates were held by those who entirely abstained from alcoholic indulgence, while the poorest certificates were held by those who took alcohol two or three times a day (Hercord). In Hungary, children are frequently found in school in a dazed condition due to the use of alcoholic beverages. Recently

in examining children in a western Pennsylvania city I was struck by the fact that most of the children had unusually small heads and were deficient in stature. The head girth of many boys from thirteen to fifteen years of age was like that of a five or six year old child. Out of twenty-one cases examined seven were feeble-minded. Many of these were children of Hungarian immigrants who, judging by the available reports, were addicted to excessive indulgence in alcohol. In the London County Council Schools 40 per cent of the children investigated under the age of eight imbibed alcohol more or less regularly. In one school of 300 pupils, 11.8 per cent drank daily, while 34.1 per cent drank occasionally. Much of the mental and physical torpor, scholastic retardation, and proneness to infectious diseases of school children is due to precocious inebriety. Precocious inebriety is, no doubt, also partly responsible for the social and industrial inefficiency of many adults. Juvenile alcoholism is essentially anti-eugenic.

My own conclusions of the relation of alcohol to eugenics may be summarized as follows: children conceived in drunkenness frequently come into the world with diminished powers of mental and physical development (sometimes resulting in pronounced infantilism), with lessened immunity to diseases of an infectious origin (*e. g.*, tuberculosis, pneumonia, diphtheria), and with increased predisposition toward the development of nervous disorders, peevishness, infantile marasmus, infantile colic, carious teeth, bodily deformities and disharmonies, convulsions, inanition, and mental and moral abnormalities. Sometimes parental alcoholism slays the progeny outright; sometimes it dooms it to temporary or lifelong invalidism, inefficiency, dependency, and mental and moral bankruptcy. Children fed on alcohol before they are born cannot be regarded as fit progenitors of a race of men and women healthy in body and mind. At the same time, I cannot agree with those who maintain that even could we eliminate the entire army of eugenically unfit with one fell swoop, two or three generations of inebriety, gonorrhea, and syphilis would restore the original number of degenerates. To reach the eugenic Utopia we must do more than restrict the evils of inebriety and venereal infection. We must make it impossible for persons to breed who suffer from transmissible defects, whatever the cause of the defects may be.

4. From the standpoint of the eugenic ideal it is desirable to prevent procreation during the periods of physiological immaturity and of involution, and to prevent over-many or unwilling conceptions. Precocious marriages tend either to curtail the life expectancy of the progeny, to retard the development of the foetus, or to issue

in sterility. Statistics indicate that the highest percentage of child mortality occurs when the pregnancies take place at or before the age of 16, and the lowest when they take place between 29 and 32 (Quetèlet). Based on a study of the families of English peers the percentages of children dying before attaining a marriageable age were as follows: for parents 15 years old at time of marriage, 35 per cent; for those between 16 and 19, 20 per cent; for those between 20 and 23, 19 per cent; and for those between 24 and 27, 12 per cent (Sandler). As regards weight, one investigation showed that when mothers at the birth of their first child were under 20 years and weighed less than 120 pounds the children were of inferior weight (Schafer). A second investigation showed that the first born males of poor mothers between 14 and 16 years of age average only about $6\frac{1}{4}$ pounds (3.124 grams) as against $7\frac{1}{4}$ pounds (3.310 grams) for the first born males of mothers of the same class between 30 and 35 (Sigismund Peller); while a third investigation indicated that those children weighed the most who were born of mothers between 25 and 30 (Matthews Duncan). Deficiency of weight at full-term birth means retarded or arrested development in utero.

Not only so, the fertility rate seems to be higher for those who marry during the more favorable child-bearing years. The average number of births for each family of English peers was as follows: for those marrying at 15, 4.40; for those marrying between 16 and 19, 4.63; between 20 and 23, 5.21, and between 24 and 27, 5.43 (Sandler). Moreover, the claim has been advanced that most famous men have been begotten between 25 and 36. It thus appears from several points of view that the eugenic age for procreation is between 25 and 35. The marriage legislation of the ancient Spartans indicates remarkable prescience of eugenic laws. The Spartans by legislative enactment established 25 years as the age for the beginning of procreation. It is not certain that it will be to the advantage of the race to defer marriage to the middle twenties so far as concerns the mass of the population (marriage is frequently an effective prophylactic against eroticism and vice), but eugenically it seems advisable to restrict generation to the period which is 'biologically most apt' for child bearing. At any rate, this is a question which it is well worth while for the eugenist to subject to unbiased and fearless scientific investigation.

Too frequent pregnancies are also anti-eugenic. Thus it is known that very short intervals between pregnancies upset the progressive increase in weight which is known to occur from the first to the last born (average weight of 1729 first born, 3254 grams; of the second and subsequent births, 3412 grams—Ingerslevs),

while long intervals do not disturb the increase (Wernicke). There are numerous women who are in an almost chronic state of semi-invalidism because of the strain and exhaustion incident to frequent parturition. Many women who are nervously exhausted, anemic, or run down cannot bear healthy, vigorous children and it is eminently humane and in accord with scientific and eugenic principles to relieve them of the burden. We know that by giving expectant mothers a ten-day rest period before confinement the weight of the newly born can be increased 10 per cent. The cause most frequently ascribed to Mongolian imbecility is uterine exhaustion. In a considerable number of my clinic cases of backward children I have been able to find no other factor than the nervous exhaustion of the mother during gestation.

Not only so, there are hundreds of thousands of families producing a progeny too multitudinous for their bank account. As a consequence the children grow up in squalor, inadequately fed and clothed, poorly safeguarded from moral contamination and physical injury, and indifferently disciplined and educated. Moreover, the parents involuntarily transmit their poverty as a social heritage to their offspring. Poverty tends to increase with the number of children, at least under modern urban conditions. Since the children are forced to go to work before they have been trained to the point of social and industrial efficiency, they are obliged to engage in unskilled labor which offers practically no opportunity for advancement with increasing maturity, and which, while it may yield returns sufficient for the needs of one person, will not provide food and shelter for the large family which seems to be the birth-right of the degenerate and the poor. The associations for the improvement of the poor know only too well that the inadequately trained children of the poor who are forced into early employment are rarely able to earn a family wage in a modern urban industrial environment.

Again, many of these poor children—as well as children born in better circumstances—are unwelcome arrivals. The parents frankly did not want them, and because they were not desired, the children are neglected or abused. To prevent their birth attempts are frequently made to abort them, sometimes successfully, sometimes unsuccessfully, and sometimes to the permanent injury of the mother or the child. The public at large has no idea of the great number of unwelcome embryos which are murdered year in and year out, of the number of premature or still-births which are directly due to instrumental interference or the use of abortifacients, and of the number of infanticides which are committed by parents of

unwelcome children. For the greater number of illegal abortions never become a matter of record. It is claimed that the abortion rate is increasing in all civilized countries (Kaye). Since 1870 the number of abortions, still-births, deaths from prematurity, and the sale of abortifacients, have greatly increased in England. Among 14,000 confinements in 1904 and 1905 there were 49 miscarriages to every 1000 labors—how many of these were due to attempted interference with normal generation no one can say. The number of women brought to Berlin hospitals for treatment after abortion (exclusive of syphilitic cases) amounted to 317 in 1900, 841 in 1910, and to 1694 in 1913. This increase of over 500 per cent in 13 years was mainly among younger women (Bleichröder).

A concrete case recently came to my notice, that of a married woman who had been deliberately and successfully aborting her unborn children for years. She failed, however, in her last attempt and it is alleged that she now often neglects her unwelcome child, sometimes leaving it to squall for hours at a time. One of the saddest tragedies of life is to permit the birth of unwelcome children; but there are no more heartless crimes recorded in the annals of man's brutality to man than infanticide or the annihilation of the unborn innocents who have become quick with life. No nation in antiquity or in modern times has ever been able to enact criminal statutes sufficiently terrifying to suppress the practice of abortion, just as no statutes ever have or ever can be enacted that will effectually suppress the prompting of the sex instinct, or the exercise of the marital functions between countless pairs of mates who ought not to beget children. These facts suggest the query whether it is not in the interest of social morality to instruct people in the use of harmless regulatives or to encourage the practice of sterilization, especially in the harmless forms of vasectomy and fallectomy. The objection to vasectomy is largely, if not entirely, sentimental: the mutilation of an alleged sacred function. Nature herself, however, does not regard the function as sacred: she sterilizes both the man and the woman who will not live within the moral law. The compulsory sterilization of all who ought not to beget children and the optional sterilization of those who do not want children will, I believe, some day become the practice of the land. The objection to enlightenment in the use of harmless regulatives is based on the fear that we should all lapse into libertinism and that the population would become decimated. But does the fear of venereal infection and of illegitimate issue now deter men and women from illicit indulgence? I do not believe that fear of consequences exercises any considerable restraining terror on those who

will not live within the moral law. People who now live moral lives would probably do so under any other system of privileges or penalties. Possibly the results would tend to a slight decrease in the population. But even relative depopulation is better than degeneration. Limitation of offspring is better than corruption, pauperization, or criminalization. Moreover, the depopulation would principally affect the lower social strata—and this would be a blessing rather than a curse—because interference in some form or other is now very widespread in the higher social strata. Yet so barbarous are the laws of our country that should anyone attempt to give specific advice to those who most need it, he would be given a term of from five to ten years in prison. It is otherwise in various European countries where scientific books may be circulated through the mails, and where hygienic advice on the limitation of offspring may be, and frequently is, given in public lectures. Thanks to the science of eugenics it is now possible even in America to discuss in a broad scientific spirit at least the foundations and implications of the sex relationship. Not only so, the ethics of the future will increasingly get its sanction from eugenics. When the ethics of eugenics has become ingrained into the psychic warp and woof of the leaders of thought and action some of our barbarous laws and practices will be relegated to the limbo of the past. Eugenics is not merely a biological conception of life; it is a system of dynamic ethics that must function in the workaday life of the people.

REVIEWS AND CRITICISM.

Vocational Guidance. By J. Adams Puffer, Director of the Beacon Vocation Bureau, Boston. New York: Rand, McNally and Company, 1914. Pp. 306.

In primitive communities, artisans received their training by being raised in the midst of those activities which would occupy them to the end of their lives. With modern industrial conditions, however, the workman may never in the course of his childhood have any contact with the operations by which he will become a productive member of the community. The parent's work is now in the factory, separated almost entirely from the life of the child, whose education, on the other hand, is supervised and controlled by an authority who is not likely to be familiar with any of the activities in which the boy will eventually engage. Thus there is no longer in this modern community that correlation between the boy's early and later life which prevailed in more primitive groups.

To effect this correlation and make the individual's life efficient through continuous development is the aim of the vocational guide. But in order to obtain the most efficient development it is necessary to have the individual's work adapted to his inherent capacities and inclinations. One person might have from the beginning the training necessary for a lawyer or a physician, and yet, because of inherent incapacity, be nothing more than a day laborer. Another individual, having the genius of a Pestalozzi, a Wagner, or a Mill, but not displaying these capacities early, might be initiated into the mechanical work of a blacksmith, plumber, or bricklayer. With these facts in view, "Vocational guidance means getting a proper job for the youth; and it also means getting the proper youth for the job."

This guidance must be given by one well versed in the methods of science, one who will apply these methods rather than depending only upon a general insight into human nature. The place where there is a monopoly of the necessary characteristics is the schoolroom, and the persons holding this monopoly are the school teachers. The professional vocational guides are the logical persons to entrust with the duty, but of these there are so few, and the conduct of the individual child in their presence is so far from natural that the best results are not obtainable. "But the teacher has the child under daily observation. She sees him off his guard, at play, under varying conditions of fatigue or of health; and if herself an expert in child nature she comes to understand him more profoundly than any other human being can. She takes the pupil young, in time to correct the evil tendencies and foster the good. She is, of all persons, most likely to have the full confidence of both the child and his parents. The vocational impulse no longer comes of itself, as once it did. Neither the home nor the church is so likely as the school to develop it."

Undoubtedly if the teacher had the other abilities necessary, this familiarity with the youth in his various activities would be the crowning qualification; but the difficulty is that the ordinary teacher is not so equipped. The majority of our teachers are technically trained in so far as the normal school is able to accomplish that end. Further qualifications they are not required to have, and

in fact, not even for this do they receive adequate remuneration. In order to have a sufficiently large number of people qualified for the important task, it will be absolutely necessary to furnish a much more extensive training, and to provide salaries large enough to repay them for undertaking such training. To understand how extensive the training must be, it is only necessary to realize that for an advisor successfully to interpret the activities of an individual, a thoroughly systematic course in psychology is only one of the requisites. It is necessary to know the racial characteristics as well, to know that the individual is taught in the manner best adapted to develop him.

These abilities are indispensable as a beginning. Further requirements are that the guides have a thorough knowledge, not only of the different trades and professions, but also of the qualifications necessary for success in any of these occupations. Considering that in the United States census more than a hundred occupations are listed, it is almost impossible to imagine one person familiar with all. In order to obtain satisfactory results the method of trial and error is adopted. "Especially relevant for self-discovery is the trying-out process which accompanies every sort of practical work, together with certain types of play, either in or out of school. There is a grammar of industrial processes through which every child ought to be put, in part at home and in part under formal instruction. He should have a chance to try his hand at drawing and painting, at wood, at metal, at clay, at caring for plants and animals, and, in the case of the girl, at sewing, cooking, and housework also. School gardens have proved not only interesting and instructive but diagnostic of the child's capacities. The ball field may suggest self-reliance or capacity for leadership which would otherwise be unsuspected. The wider and more varied the test, the better for all concerned."

This statement of principle seems to the reviewer to be most satisfactory and most likely to give results. Not by any method of predetermination, nor by an ability to judge what the child should do in a profession or trade by what he does in the ordinary school work or play, but by actually putting the child at the various types of work and observing what he does best, shall one determine what he should do as his life work. When this is established, it would only be necessary to make it possible for that child to become proficient in his own line. For this purpose, a knowledge of the qualifications necessary for any or all trades and professions will not be required on the part of the guide, but the much more simple knowledge of the location and opportunities in the various classes of employment. This knowledge is not difficult to obtain, and the teachers now engaged can without great effort acquire it. To assist them in doing so, this book seems valuable, for it includes discussions on various types of employment, information as to where certain industries are located, and estimates of the probability that the youth in certain communities will enter certain occupations.

DAVID MITCHELL.

NEWS AND COMMENT.

American Public Health Association Meeting.

The American Public Health Association, whose membership covers the United States, the Dominion of Canada, and the Republics of Cuba and Mexico, will meet this year in joint session with the National Mouth Hygiene Association at Jacksonville, Florida, November 30th to December 4th. At the same time the Southern Health Exhibition will be open, its displays including almost every phase of health conservation work, such as rural sanitation, typhoid, hookworm, tuberculosis, pellagra, malaria, school construction and medical inspection, infant and child hygiene, midwifery, vital statistics, milk and water supply, food and drug inspection, habit-forming drugs, insect carriage of disease, fly eradication, plague prevention and rat extermination, as well as laboratory work and modern sanitary apparatus of every sort. The combined meeting offers an opportunity which no one engaged in public health work should miss. A preliminary announcement, giving the program and details as to transportation and hotel accommodations, may be had from the secretary, Professor Selskar M. Gunn, Boston, Mass.

A Psychological Clinic in New Brunswick, N. J.

A Psychological Clinic was started this summer at Rutgers College, New Brunswick, N. J., in connection with the summer session of the State College. The direction of the clinic was put in charge of Dr. Margaret Otis, psychologist for the State Home for Girls. The ostensible purpose was to furnish an advanced course for teachers and supervisors, to give them practical work in the application of mental tests, yet the work accomplished by members of the class proved to be of unexpectedly great practical value in that the children tested benefited by the advice given as a result of their examination.

The chief work for the summer was the testing of children from an Industrial Home, and a report on the mental condition of the children was given to the authorities at the close of the session. Aside from the examination of these children, a number of special cases from the town were brought to the clinic. Among these five institutional cases were studied, one of them a cretin, twelve years of age, who exhibited all the characteristics of her type.

Some of the students who had already had training in clinical work were given special problems in the way of certain tests applied to the cases in hand. Some of these were: the Completion Test, the Fable Test, the Wells Form-Learning Test. The results of these tests were used to help determine the mental capacity of the children examined.

Thirty-six cases of children from the Home were considered, fifteen boys and twenty-one girls, varying in age from three years to fifteen. These furnished interesting material to study, different types of temperament and disposition, varying mentally from the bright, alert school child to the case of decided defect. They were classified into the following groups: (I) Normal; (II) Backward; (II) Defective.

I. Those in the normal group numbered twenty-three, though two of these exhibited instances of speech defect. One boy of ten had a cleft palate, but had

made good progress in school work and had the ambition to become a florist. Another little boy of three whose mother was a deaf-mute could talk but little, yet his hearing was acute and he could make himself understood in case of necessity by signs, and he seemed possessed of normal mentality for his age. Seven children in this group tested well and also were found to be doing the school work that they should, giving promise of benefiting by an education. Seven others, young children between the ages of three and six, who possessed normal capability, had not yet been started in school work but gave promise that they would develop normally and would benefit by whatever instruction could be given them. The remaining eight showed from the testing that they had normal capacity, but they were quite backward educationally. This fact could be explained because of their lack of school opportunity from early childhood. These children were recommended for special instruction in order to remedy the neglect from which they had suffered in the past. They are all decidedly hopeful cases and can be helped.

II. The backward group consisted of three girls, two thirteen and one fifteen years of age; and four boys, one ten, one eleven, and two twelve years of age. One case, a girl of thirteen, was one of a family of eight children. The mother was dead and the father a drunkard. She was attractive and well-formed but below the average in physical development. She was bright, spoke well, and seemed ambitious. She could do very satisfactory work about the Home and said she would like a home "outside" and more schooling. She was decidedly a hopeful case and would no doubt improve if an opportunity could be found for her. Next on our list are two sisters, thirteen and fifteen. They are problems, for as their home environment is not good, and as they soon will be too old to be kept longer in the Home, their future is dubious. They are not capable of benefiting by more schooling, and are fitted socially and industrially to be domestic servants. The best thing for them would be to be placed in some household where they would receive care in return for their services. The four boys in this backward group are recommended for manual work. Two cases where the backwardness is very pronounced may prove to be cases of defect. They should be watched carefully and retested from time to time..

III. The defective group consists of six children, five girls and one boy. Two girls, twelve and ten years of age, are sisters of the backward girl of thirteen described above. The grandparents were French of respectable origin, but the father was a dissipated man. The mother's health was always poor. The defect seems to run through the family. Neither of these girls is capable of succeeding in life and they will need supervision permanently.

A girl of thirteen, four years retarded, has the physique and appearance of a child of ten years. For ten years mentally she does things well. She cannot do school work suited to her years. She might be trained for domestic service and work for some one who would take an interest in her.

A girl, seven years of age, furnishes an example of the unstable type nervously. She is an illegitimate child, and was placed in the Home about two years ago. Not much information can be obtained as to her parents. Physically, she is above the average of girls of her age. She is very affectionate and rather boisterous. She laughs a great deal and without provocation. The recommendation

in this case was that she should be placed in a special class, and watched closely to see if it is a case of permanent retardation.

Two children, a boy and a girl of Slavic origin, eight and six years of age respectively, are the last on our list. The father is dead but the mother is living and a very good woman. She pays for the support of the two children. The boy's physique is irregular and his eyes have a peculiar stare. He is very reluctant to speak or to express himself in other ways. His attention is wavering and he is not equal mentally to other boys of his age. He is a candidate for a special class. The girl is a very amiable child, but refuses to talk above a whisper. She is hydrocephalic. She is listless and does not try to do anything that is asked of her. It is doubtful if she can develop into a normal woman. The children may be improved by special class work.

Much interest in the clinic was shown by the people of the town, and several parents brought their children in to see if they were as advanced for their years as they should be. It is hoped that another summer the work of the clinic can go on and have the co-operation of the public school system. Also it would be a help to the settlement work that has been started in New Brunswick to have expert advice on some of the problems which are troubling the social workers.

Meeting of the American Psychological Association.

The American Psychological Association will meet this year in conjunction with the American Association for the Advancement of Science at the University of Pennsylvania, Philadelphia. The session will be opened by the President, Professor R. S. Woodworth, of Columbia, on Tuesday of Christmas Week, December 29th, and continue on the following days. For the general gatherings of the Psychological Association, the Board of Managers of the University Hospital has granted the use of the Medical Clinic Room, which will seat 200 to 300 persons, is well equipped with projection apparatus, etc., and has several entrances. The University Hospital is only half a block distant from the Laboratory of Psychology in College Hall, where smaller meetings of committees and sections will be held.

The Headquarters of the Association will be the Hotel Walton, Broad and Locust Streets, about fifteen minutes by street car from the University. Several other hotels near the Walton offer equally comfortable accommodations for members. The social possibilities of the occasion will be cared for by the University of Pennsylvania, which will entertain the Association daily at luncheon. This will give an opportunity for informal conferences, making the members better acquainted and facilitating the transaction of business, as well as adding greatly to the enjoyment to be had from the meeting.

The Psychological Clinic

Copyright, 1914, by Lightner Witmer, Editor.

VOL. VIII, No. 7.

DECEMBER 15, 1914

THE SIGNIFICANCE OF THE BINET MENTAL AGES.

BY EDWARD L. THORNDIKE, PH.D.,

Teachers College, Columbia University.

In view of the wide use that is being made of the Binet-Simon tests, in one or another of their varieties, it seems important to know how far their successive steps, labeled *Mental Ages, 3, 4, 5, 6, 7, etc.*, really represent the normal or average or modal ability of children of those ages. It is recognized that the thirteen-year test represents an ability much above that of the normal or modal or average thirteen-year-old child. But Goddard has asserted that "the Binet Scale was wonderfully accurate"—that its questions are "well graded, at least from the ages of five to twelve, and that they

TABLE I.

Number of children of each chronological age who were rated by Goddard as of each Binet Mental Age; 1547 children were reported belonging to Grade VI or lower.

Chronological Age	Binet Mental Age													Totals
	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII		
4 yrs.....	1	2	2	3										8
5 ".....	2	4	8	40	40	16	4							114
6 ".....	1	0	3	29	48	69	9	0	1	....	....	....		160
7 ".....	0	1	2	8	15	114	50	4	3					197
8 ".....		2	2	1	87	86	16	12	3					209
9 ".....					27	54	56	58	4	2				201
10 ".....				3	15	24	19	124	27	8	2			222
11 ".....					1	4	13	25	50	60	12	1		166
12 ".....						4	10	13	42	36	39			144
13 ".....						1	5	6	30	19	21	7		89
14 ".....							1	1	6	5	4	3		20
15 ".....								3	0	1	2	0		6
Totals.....	3	6	17	81	111	337	256	143	326	155	88	13		1547

fit the ages to which they are assigned";¹ and others have accepted this conclusion.

I shall show that the very measurements whence Goddard derived this assumption of the exact correspondence of the Binet mental ages V to XIII, to the average ability of *chronological* ages 5 to 12, show in reality something entirely different, and that so also do the results of others who have used these tests.

Goddard's facts are given in table I (a copy of table I on page 234 of the article referred to above).

If one reads this table down, asking "Does the Binet or mental age hit the corresponding chronological age?" the affirmative answer seems correct, unless one realizes that the numbers should first be turned into percentages of the total numbers examined of the age in question. But when one realizes this and replaces, say, the 3, 4, 27, etc., of the column under XI by:

Binet Mental Age XI	
Chronological Age	Frequency
8.....	1.5
9.....	2
10.....	12
11.....	36
12.....	25
13.....	21
14.....	25
15.....	17

he at once sees the failure of the Binet standards to correspond with the ages whose names they bear. The Binet XI fits chronological 12½, the Binet XII fits chronological 13½. You must not test 166 eleven-year-olds and only 20 fourteen-year-olds and then use the gross numbers of 60 eleven-year-olds and only 5 fourteen-year-olds testing at Binet XI to prove that Binet XI fits the eleven-year-olds.

The whole error becomes clear when the table is read horizontally. Take the line for the chronologically thirteen-year-old children, for example. There were 89 of them, of whom 1 tested at Binet VII, 5 at Binet VIII, 6 at Binet IX, 30 at Binet X, 19 at Binet XI, 21 at Binet XII and only 7 at Binet XIII. Of 144 twelve-year-olds, only 39 tested at Binet XII or higher, while Binet IX, X, and XI had 91.

The average and the median Binet ages for the four-year-olds, five-year-olds, etc., tested by Goddard were as follows (table II).

¹ *Pedagogical Seminary*, June, 1911, Vol. 18, p. 232 and p. 538.

TABLE II.

The Binet Test values corresponding to each chronological age, using the data of table I.

Chronological Age	Median. Binet Age or so-called Mental Age	Average. Binet Age or so-called Mental Age
4	5.0	4.9
5	5.6	5.6
6	6.5	6.3
7	7.1	7.1
8	7.6	7.8
9	8.8	8.8
10	9.9	9.7
11	10.3	10.1
12	10.6	10.5
13	10.6	10.7
14	10.9	11.0
15	10.0	10.3

These figures however cannot be taken at their face value, for Goddard's 1547 cases were all from grades VI or below, and represent therefore a superior selection of 4-, 5-, and 6-year-olds and an inferior selection of 13-, 14- and 15-year-olds (and to some extent of 12-year-olds). We shall be able to make allowance for this more intelligently after examining some of the results obtained by other investigators.

Dougherty¹ tested children in grades 1 to 8 of a certain school, getting a fair sampling of children of each age from 7 to 14, and finding the facts shown in table III, columns 4 and 5.

As nearly as I can judge, Terman and Childs² got approximately the facts shown in table III, column 6. They had a fair sampling up to 13, but had rather inferior pupils of ages 13 and 14 (pupils still in grade VII).

Strong³ testing about 30 of each age from six to twelve (how selected, I cannot be sure), found the facts shown in columns 7 and 8 of table III.

It is clear from table III that eleven-year-old children do not equal the Binet XI standard, but a standard of about 10.6 (or $X + \frac{1}{2}$ of the Binet X-XI step); that twelve-year-old children do not equal the Binet XII standard, but about 10.9 ($X + \frac{1}{2}$ of the Binet X-XI step). As to the older children, even if we make a very generous allowance

¹ *J. of Ed. Psy.*, 1913, Vol. IV, p. 341.

² *J. of Ed. Psy.*, 1912, Vol. III, p. 69.

³ *Ped. Sem.*, 1913, Vol. XX, p. 489.

for the stupidity of Goddard's thirteen and fourteen-year-olds in grades VI and below, and for Terman and Child's thirteen and fourteen-year-olds in grades VII and below, we still find that they do not on the average pass the Binet XII. Probably 11.4 (or XI plus $\frac{4}{10}$ of the Binet XI-XII step) is as high as the general run of thirteen-year-old children would score.

TABLE III.
Median and average Binet scores found for each year of age.

Chrono- logical Age	Measurements by Goddard		Measurements by Dougherty		Measurements by Terman and Childs.	Measurements by Strong	
	1 2 Median	3 Average	4 Median	5 Average		7 Median	8 Average
7	7.1	7.1	7.3	7.4	7.5	7.1	7.1
8	7.6	7.8	8.0	8.0	9.25	8.1	8.2
9	8.8	8.8	8.8	8.7	9.0	8.9	9.0
10	9.9	9.7	9.8	9.7	10.0	9.4	9.7
11	10.3	10.1	10.6	10.6	10.5	10.9	10.6
12	10.6	10.5	11.0	10.8	10.8	11.1	11.0
13	10.6	10.7	11.1	11.0	11.3		
14	10.9	11.0	11.7	11.5	12.0		

This means of course that the Binet X, XI and XII are not exact correspondents of the normal or modal abilities of children ten, eleven and twelve years old. The mental ages represented by the Binet scores for VII to XII seem to be about as shown in table IV.

In all the foregoing I have used eight-year-olds to mean children 7 years 6 months to 8 years 6 months, and similarly for all other ages, adapting Terman and Child's figures to this meaning. Such was the practice of all but Terman and Child as nearly as I can discover.

Since this was written, the article by Brigham¹ has appeared. All the children in grades 1 to 6 of a certain school were tested by Brigham with the result that the seven-year-olds had an average Binet age of 7.05; the eight-year-olds, of 8.08; the nine-year-olds, of 8.94; the ten-year-olds, of 9.49; the eleven-year-olds, of 10.30; the twelve-year-olds, of 10.62; and the thirteen-year-olds, of 10.79. Allowing generously for the fact that some of the brightest twelve-year-olds would have passed beyond grade 6, and that the brightest half of the thirteen-year-olds would have done so, these results agree fairly well with those used in this article and do not suggest any considerable change in table IV.

¹ *J. of Ed. Psy.*, 1914, Vol. V, pp. 439-448.

TABLE IV.

The true "mental" ages denoted by the Binet scores VII.0, VII.2,
VII.4, XI.8.

Score by Binet Test	The True Mental Age denoted thereby
VII. 0	6.8
“ 2	7.0
4	7.25
6	7.5
8	7.75
VIII. 0	8.0
2	8.2
4	8.4
6	8.6
8	8.9
IX. 0	9.1
2	9.3
4	9.5
6	9.75
8	10.0
X. 0	10.25
2	10.5
4	10.75
6	11.0
8	11.6
XI. 0	12.2
2	12.6
4	13.0
6	13.4
8	13.8

THE BINET TESTS APPLIED TO COLORED CHILDREN.

BY BYRON A. PHILLIPS, PH.D.

Supervising Principal, Harriet Beecher Stowe School, Philadelphia, Pa.

In measuring retardation in the past, emphasis has been laid on pedagogic retardation owing to the fact that the psychological retardation of large numbers of children was impossible to ascertain. The Binet test furnishes us with a method for measuring the psychological retardation of the child. It is, however, almost impossible to test every child in the school system of a great city by means of these tests. This is so for two reasons: first, the length of time that would be required; secondly, the limited number of those who can handle the Binet tests. This method of testing, however, might be easily applied to a limited group of children and the psychological retardation compared with the pedagogic.

In a former article (THE PSYCHOLOGICAL CLINIC, Vol. 6, No. 3) a comparison was made of the retardation of schools containing all colored pupils and of those containing none or only a few. The result of this has shown that the retardation of the colored schools is as follows:

J. Miller School.....	68.2	per cent
Pollock School.....	60.6	"
Catto School	67.3	"
Ramsey School.....	70.9	"
Vaux School.....	66.3	"
Hill School.....	72.0	"
Meehan School.....	58.3	"
Wilmot School.....	59.3	"

The retardation of Philadelphia in that year was 40.3 per cent. No school in the city, even those composed almost totally of foreigners, had a retardation percentage above 56 per cent.

While the result from this investigation leads to the conclusion that the mentality of the two groups is not the same, or else that the courses of instruction do not fit both groups equally well, there are a great many factors entering into this result which make it dangerous to draw conclusions.

One of these factors in particular is the environmental conditions of each group. Even ascertaining the environmental conditions of each group, still without knowing the home conditions of each individual our conclusions are apt to be erroneous. In order to make a comparison of the two groups a psychological method is preferable

to a pedagogical if we can control all the factors. Of course in any scientific experiment we should endeavor to reproduce exactly the same conditions in each group of phenomena. This is particularly difficult in sociological studies. However, we have endeavored to secure this result, by having the Binet tests made by a single individual, by taking pupils of the same chronological age as nearly as possible, and more important still we have only compared the white with the colored who have had the same home conditions.

Forty colored girls and 46 colored boys, totaling 86, were tested by the Binet scale; 75 white girls and 62 white boys, totaling 137, were likewise tested. The home of each of these 223 pupils was visited and the home conditions noted, as Excellent, Good, Fair and Poor. In so rating the home the material (money), intellectual, and moral elements were noted in making up the rating. In the following comparison only the white children of excellent home conditions are compared with the colored of excellent home conditions; the white of good home conditions with the colored of good home conditions, and so on. This method of procedure, of course, necessitated the elimination of quite a number of those tested, so that our final comparison is made on 29 each of colored boys and girls respectively.

Table I gives a percentage of the colored and the white boys arranged chronologically. It will be noted that this table gives the following data: the chronological age, the Binet age, the Binet retardation, the Binet acceleration, the school grade, and the home conditions. Table II gives the same data for the girls.

Table III summarizes tables I and II. This table, it will be noted, is divided into three parts. Part I shows that the retardation of the colored boys is .83, of the colored girls .57, and of boys and girls combined .7, against no average retardation for the white. On the other hand there is no acceleration in either colored girls or boys, while the white boys are accelerated .16, the white girls .19, the combined white group .17.

Passing to the second group we see that of those tested 37.9 per cent of the white boys were retarded, while 65.5 per cent of the colored boys were retarded; that 46.4 per cent of the white girls were retarded and 71.4 per cent of the colored girls were retarded; and that 42.1 per cent of the white boys and girls combined were retarded, and that 68.4 per cent of the colored boys and girls combined were retarded. This makes the colored boys retarded 17.4 per cent more than the white boys; the colored girls retarded 25 per cent more than the white girls; while the total rate of retardation of both groups is 26.3 per cent.

In the third group we find that 31 per cent of the colored girls

TABLE I—BOYS.

COLORED						WHITE					
Chronological Age	Binet Age	Retardation	Acceleration	School Grade	Home Condition	Chronological Age	Binet Age	Retardation	Acceleration	School Grade	Home Condition
15.0	11.2	3.8		5	E	15.8	11.4	4.4		6	E
14.2	9.8	4.4		5	F	14.5	11.2	3.3		5	F
13.9	11.8	2.1		5	G	13.8	11.0	2.8		6	E
13.0	9.6	3.4		4	E	13.0	10.2	2.8		4	G
12.5	12.2	.3		7	E	12.5	12.0	.5		7	E
11.2	10.2	1.0		4	G	11.1	10.8	.3		4	E
11.0	9.6	1.4		4	E	11.0	10.2	.8		4	G
10.5	11.0		.5	5	G	10.5	11.6		1.1	5	G
9.9	8.8	1.1		3	F	9.8	10.6		.8	4	E
9.6	9.8		.2	3	P	9.7	9.2	.5		4	G
9.5	10.2		.7	3	P	9.6	10.0		.4	2	F
9.5	8.2	1.3		2	G	9.5	9.6		.1	3	P
9.3	10.0		.7	4	G	9.3	8.0	1.3		1	G
9.2	9.0	.2		1	G	9.2	9.2			2	P
9.1	7.8	1.3		2	E	9.0	9.4		.4	2	G
8.8	7.6	1.2		1	G	8.6	10.0		1.4	2	G
8.7	8.8		.1	2	G	8.3	8.2	.1		2	F
8.6	6.8	1.8		1	F	8.2	10.2		2.0	2	G
8.5	7.0	1.5		2	P	8.0	9.2		1.2	2	G
8.2	6.8	1.4		1	G	8.0	9.8		1.8	2	P
7.5	7.2	.3		1	G	7.6	8.0		.4	1	G
7.5	9.0		1.5	2	E	7.6	9.6		2.0	2	F
7.3	8.2		.9	2	E	7.6	10.0		2.4	2	E
7.2	7.2			1	G	7.4	9.0		1.6	2	E
7.1	6.2	.9		1	F	7.3	8.8		1.5	2	E
7.0	7.4		.4	2	E	7.2	9.2		2.0	2	G
6.9	6.2	.7		1	F	6.7	7.6		.9	1	E
6.3	7.0		.7	1	E	6.5	7.8		1.3	1	E
6.0	5.2	.8		1	E	6.5	7.6		1.1	1	F

TABLE II.—GIRLS.

COLORED						WHITE					
Chronological Age	Binet Age	Retardation	Acceleration	School Grade	Home Condition.	Chronological Age	Binet Age	Retardation	Acceleration	School Grade	Home Condition
14.4	11.8	2.6		8	E	14.5	15.6		1.1	8	E
14.3	12.0	2.3		7	E	14.4	13.0	1.4		7	E
13.7	12.2	1.5		7	E	13.5	13.0	.5		7	E
13.1	15.0		1.9	7	E	13.4	12.4	1.0		7	E
12.8	12.4	.4		5	G	12.5	15.0		2.5	5	G
12.5	12.6		.1	7	G	12.4	15.0		2.6	5	G
12.5	10.6	1.9		5	E	12.1	12.2		.1	7	E
11.7	10.0	1.7		3	G	11.1	9.6	1.5		3	G
10.9	9.4	1.5		3	F	10.8	9.4	1.4		4	G
10.8	9.0	1.8		3	E	10.6	9.4	1.2		3	E
10.7	8.2	2.5		3	E	10.4	9.8	.6		4	G
10.4	9.6	.8		4	G	10.1	8.6	1.5		2	G
10.3	10.2	.1		5	G	10.0	9.4	.6		4	E
10.0	9.2	.8		2	E	10.0	9.6	.4		4	E
9.5	8.2	1.3		4	G	9.8	10.4		.6	3	G
9.5	11.4		1.9	4	E	9.7	8.8	.9		3	E
8.7	8.0	.7		2	F	8.0	9.4		1.4	1	E
8.4	8.0	.4		2	E	8.0	8.8		.8	2	E
8.3	8.4		.1	2	E	8.0	9.6		1.6	2	G
8.1	6.8	1.3		1	G	8.0	9.0		1.0	2	F
7.6	7.2	.4		1	F	7.8	7.2	.6		2	G
7.6	6.0	1.6		1	G	7.7	6.2	1.5		1	G
7.5	8.8		1.3	2	G	7.6	9.2		1.6	1	G
7.3	7.6		.3	1	G	7.0	8.2		1.2	1	G
6.9	6.6	.3		1	G	6.7	7.6		.9	1	E
6.8	6.4	.4		1	G	6.6	8.4		1.8	1	E
6.2	7.2		1.0	1	E	6.5	7.2		.7	1	G
6.1	7.2		1.1	1	E	6.1	6.6		.5	1	G

TABLE III.

WHOLE GROUP						RETARDED GROUP				ACCELERATED GROUP			
Total Chronological Age	Total Binet Age	Average Chronological Age	Average Binet Age	Average Retardation	Average Acceleration	Number Retarded	Percentage of Group Retarded.	Total Retardation	Average Retardation of Retarded Group	Number Accelerated	Percentage of Group Accelerated	Total Acceleration	Average Acceleration of Accelerated Group
Colored Boys (29)	yr. 273 yr.	yr. 249.8	yr. 9.41	yr. 8.58	yr. .83	19 on 29	65.5	28.7 yr. +19	yr. 1.51	9 on 29	5.7 yr. +9	yr. .63	
White Boys (29)						11 on 29	37.9	17.8 yr. +11	yr. 1.61	18 on 29	22.4 yr. +18	1.24	
Colored Girls (28)						20 on 28	71.4	24.3 yr. +20	yr. 1.215	8 on 28	7.7 yr. +8	.962	
White Girls (28)						13 on 28	46.4	13.1 yr. +13	yr. 1.007	15 on 28	18.4 yr. +15	1.226	
Colored Boys and Girls						39 on 57	68.4	52 yr. +39	yr. 1.33	17 on 57	13.4 yr. +17	.788	
White Boys and Girls						24 on 57	42.1	30.9 yr. +24	yr. 1.287	33 on 57	40.8 yr. +33	1.236	

29 Colored Boys + 28 Colored Girls

29 White Boys + 28 White Girls

are accelerated, while 62 per cent of the white girls are accelerated; that 28.5 per cent of the colored boys are accelerated and 53.5 per cent of the white boys; and that 29.8 per cent of colored boys and girls are accelerated and 57.8 per cent of both white girls and boys. This makes a difference in the acceleration between the two races of 31 per cent in favor of the white boys, 25 per cent in favor of the white girls, 28 per cent in favor of the white pupils with boys and girls combined.

This would seem to corroborate the findings in the case of pedagogic retardation. We see in every group, considering the retardation from pedagogical or psychological view points, that the colored pupils are retarded from 20 to 30 per cent more than the white pupils, and that the white pupils are always greatly above them in acceleration.

The above data are taken from experiments where the home conditions are practically the same. It is interesting, however, in corroboration of the above to note the results obtained from the testing of the whole group. Table IV gives them:

TABLE IV.

		Whole number tested.	Number retarded one year or over	Number accelerated one year or over	Percentage of group retarded one year or over	Percentage of group accelerated one year or over
BOYS	Colored	46	27	1	59	2
	White	91	19	20	21	21.9
GIRLS	Colored	40	20	5	50	12.5
	White	75	22	14	29.3	18.6
COMBINED	Colored	86	47	6	54.6	6.9
	White	166	41	34	24	20.4

We note here that 59 per cent of the colored boys are retarded one year or more and 21 per cent of the white boys. That 50 per cent of

the colored girls are retarded one year or more against 29.3 per cent of the white girls, and combining the two we find that the colored retardation is 54.6 per cent against 25.4 per cent of the white retardation.

On the side of acceleration we have 2 per cent of the colored boys accelerated against 21.9 per cent of the white boys; 12.5 per cent of the colored girls against 18.6 per cent of the white girls, with a total colored acceleration of 6.9 per cent against 20.4 per cent of white acceleration.

In applying the Binet tests to colored children the following facts of interest were fortunately thrust upon our attention. In the first place the colored pupils as a class were good in the memory tests and poor in those requiring judgment. They were generally slower in response. The testing of the colored children took a much longer time than the white. Their reaction time was greater, they were less animated. It is significant to note that the younger white children were more advanced than the colored children of the same age. This is in contradiction to the generally accepted fact that colored children are quicker when young.

To summarize, we see, first: that the colored children are retarded to a much greater extent both pedagogically and psychologically than the white children; and secondly, that the white children are accelerated to a much greater extent than the colored children.

If the Binet tests are at all a gauge of mentality it must follow that there is a difference in mentality between the colored and the white children, and this raises the question:—Should the two groups be instructed under the same curriculum?

EXPERIENCE AND THE BINET-SIMON TESTS.

By RUDOLF PINTNER AND DONALD G. PATERSON,

Ohio State University, Columbus, Ohio.

The ideal measuring scale would test a child's innate mental ability without taking into account knowledge that he may have acquired through experience. This is obviously an ideal that will never be absolutely realized. The nearer we can approach this ideal, however, the more reliable a scale shall we possess for the grading of children and adults. The Binet-Simon Scale at first made great claim to be immune from the influences of experience. Although this is, no doubt, true of many of the tests, perhaps of a majority of them, there seem to be a few at least that can be justly criticized in this respect. Without agreeing entirely with the sweeping criticisms of Ayres,¹ we believe there is much to be said on this point, particularly with two of the tests, *i.e.* naming the days of the week and naming the months of the year.

The days of the week was regarded originally by Binet as a nine year old test and the months of the year as a ten year old test. In the revised scale of 1911, however, Binet² omitted some of the original tests and one of these is the Days test. He says, "There are some tests which demand knowledge that does not do any honor to the intelligence of a child. To know one's age, to know the number of one's fingers and to know how to name the days of the week proves above all that these simple lessons have been learned from the parents. We have thought it well, therefore, to omit these three tests." On the other hand the Months test is retained, but is made a nine year old test without further comment.

Goddard's³ results on 2000 normal children for the two tests in question are given on the following page:—

¹ L. P. Ayres, *The Binet-Simon Measuring Scale for Intelligence: Some Criticisms and Suggestions.* *THE PSYCHOLOGICAL CLINIC*, Vol. V, 6, pp. 187-197.

² Binet, *Nouvelles Recherches sur la mesure du niveau intellectuel chez les enfants d'école. L'année psychologique*, Vol. 17, 1911; pp. 145 ff.

³ H. H. Goddard, *Two thousand children measured by the Binet Measuring Scale of Intelligence.* *Pedagogical Seminary*, June, 1911, Vol. 18, pp. 232-259.

TABLE I.

Binet Old Scale.	Age											
	7		8		9		10		11		12	
	P	F	P	F	P	F	P	F	P	F	P	F
IX 2. Days	13	11	85	4	55	0	2	0	1	0	.	.
X 1. Months	0	1	11	6	48	6	102	3	14	0	2	0

P = Passed, F = Failed.

Upon these results is based to a great extent his revision of the Binet Scale as now generally used in this country. It seems questionable to the writers as to whether he is warranted in replacing the Days test as an eight-year-old test, when he has tested only 24 seven-year-olds and finds among these a percentage of 54 correct answers. Again with the months there are only 17 cases among the eight-year olds and 65 per cent of these pass. With Binet, on the other hand, only 20 per cent of his eight-year-olds pass this test. It is not the purpose of this paper to go further into this question. The uncertainty of these two tests even as they now stand for normal children in the approved scale, has only been mentioned in view of the results that have been found by the writers in work with adults.

Even if these tests are adequate for children, are they equally so for adults? Is not such ordinary knowledge as is contained in knowing the days and the months likely to be forced upon an adult during years of experience in the outside world or within the walls of an institution, even although the adult possesses a lower mentality than the child of nine or eight? In other words does not the factor of experience, of constant repetition of these common names, enter unduly into these two tests? We believe this to be the case from a study of 988 Binet blanks of the inmates of a large institution for the feeble-minded.⁴ The results of the tabulation of these cases seem to point to the fact that as a feeble-minded person grows older his ability to pass these two tests increases. The cases have been divided into two groups,—those below a chronological age of fifteen when tested, and those above fifteen when tested. Age fifteen was chosen arbitrarily. Tables II and III show the number of failures and passes in the two tests for those below and those above fifteen respectively.

⁴ The Ohio Institution for the Feeble-minded. The authors desire here to thank Dr. E. J. Emerick, superintendent of the institution, for his kindness and courtesy.

EXPERIENCE AND THE BINET-SIMON TESTS. 199

TABLE II.
ALL AGES BELOW 15 WHEN TESTED.

Mental Age.	Number of Cases.	Days of Week		Percent- age of Passes.	Number of Cases.	Months of Passed.	Year Failed.	Percent- age of Passes.
		Passed.	Failed.					
3	3	1	2	33	1	0	1	0
4	21	1	20	4.8	2	0	2	0
5	52	14	38	27	19	1	18	5.3
6	95	56	39	59	66	7	59	10.6
7	100	87	13	87	100	35	65	35
8	72	71	1	98.6	71	55	16	77.5
9	31	31	0	100	31	27	4	87
10	8	8	0	100	8	6	2	75
Total...382								

TABLE III.
ALL AGES ABOVE 15 WHEN TESTED.

Mental Age.	Number of Cases.	Days of Week		Percent- age of Passes.	Number of Cases.	Months of Passed.	Year Failed.	Percent- age of Passes.
		Passed.	Failed.					
3	5	2	3	40	1	0	1	0
4	28	4	24	14.3	15	2	13	13.3
5	50	27	23	54	36	5	31	13.9
6	77	62	15	80.5	70	20	50	28.6
7	127	125	2	98.5	112	76	46	68
8	128	128	0	100	128	118	10	92.3
9	101	101	0	100	101	94	7	93
10	70	70	0	100	70	68	2	97.2
11	20	20	0	100	20	20	0	100
Total...606								
Grand total..988								

In the first column the mental age as determined by the Binet-Simon scale (Goddard's revision) is given, in the second column the number of cases, in the third column the number passing the Days of the Week test, in the fourth column the number failing in that test, and in the fifth column the percentage of cases correct for that test. The last four columns give the analogous data for the Months of the Year test.

Looking at the percentage of passes for all ages in table II, it would seem that the Days test is too easy for our eight year olds,

that it is in fact a seven year old test. The significant rise in the percentages is between ages six and seven, a rise from 59 to 87 per cent. Similarly with the months, we have the significant rise between the ages of seven and eight, a rise in this case from 35 to 77.5 per cent. We do not mean to infer that these tests are not correctly placed in the Binet Scale as it now stands, since it may be that these large percentages in ages seven and eight respectively are caused by children who are chronologically between ten and fifteen. What we are particularly interested in here is to compare the percentages in table II with those in table III. Here the significant rise in the percentages takes place one year earlier than in the first set of cases. For the Days test at age six we have now 80 per cent passes as compared with only 59 per cent for the younger children. For the Months test at age seven we have 68 per cent passes as compared with only 35 for the younger group. In other words we might say that about 80 per cent of the feeble-minded adults of a mentality of six can pass an eight-year-old test and that 68 per cent of a mentality of seven can pass a nine-year-old test. This must be obviously due to the fact that they have come to learn or have been taught this commonplace knowledge. It may be in many cases a mere repetition of words with very little meaning content. But the point seems to be that it is experience alone and not mental ability that is shown. The inability of a child of nine or ten to pass these two tests does not preclude him from being able to pass them at a later date notwithstanding permanent mental arrest.

If the entire scale were made up of such tests it is obvious that it would be of little use in testing adults. But such is not the case. It might seem well, however, in view of the facts we have called attention to in the present study, to improve the scale by eliminating these two tests altogether, or at least in placing them two years lower in a revised scale for testing subjects chronologically older than fifteen years.

A STUDY IN THE BORDERLAND OF MORALITY.

BY MARGARET OTIS, PH.D.

Indian Orchard, Mass.

In examining delinquent cases a psychologist is expected to give an arbitrary answer to the question "Feeble-minded or not? Responsible or irresponsible?" Yet some of the most interesting cases are those which cannot be classified. After reading Grasset's *Les Demi-fous* and passing thence to the investigation of actual cases, one is impressed with the truth that there are many borderline cases, so-called, individuals who may pass most tests, yet may not be morally fully responsible, and may fail to maintain themselves in any position in which they may be placed. Such girls,—for the cases under present study are those of delinquent girls,—may possess very attractive qualities and may appeal strongly to philanthropist and reformer, and may encourage efforts to stimulate their development and to give them the moral training they lack in the social standards generally accepted. Such a case is found in the following history:

Lillian Blucher was the child of humble, yet fairly well-to-do parents, of German parentage on her father's side and of French on her mother's. Not much is known of her infancy, but she seemed to have had average care and was trained in church going,—the Lutheran church. Nor is much known about the father except that he was intemperate and separated from his wife when Lillian was a school girl. He disappeared later and no more was heard from him. The child appreciated the difficulty in the home and suffered from the disagreement of her parents. Her mother found her hard to control, and a tendency to deceive, prominent in her after-career, appeared early.

It was unfortunate for Lillian that her mother failed to obtain a sympathetic knowledge of the young girl's needs. Obliged by her husband's desertion to earn her own living and to care for her small property, she was forced to be away from home much of the time and her two children, Lillian and a boy, ran wild. At fourteen and a half Lillian was already mature and attractive to the boys. Developing early sexually, she felt the impulse to get away from home influences that appears in many girls at puberty. And now it was the traditional time for joining the church, and attendance on a confirmation class became necessary. She was often absent from class and deceived her mother as to her whereabouts. The mis-

chief that ruined her life was done, however, in the confirmation class itself. The minister's son was also in the class and proved a charming companion. Lillian grew more regular in attendance after he had walked home with her one time, and they had many whispered conferences in the intervals of the minister's explanations. She met him often outside and at his home, notwithstanding her mother's objections, for instinctively the mother felt that he would not do well by her girl. Her fears were realized when one evening, on the impulse of the moment he asked the girl to go off with him, and in a manner perfectly characteristic of her nature, without reflection she went. For a time she was very happy, or thought she was, for was it not a *union of souls*, a true marriage, as her beloved often asserted? Indeed, he told her that they *were* married and she believed him.

This blissful experience lasted one month, and then came disillusionment. Suffice it to say that not long after she was committed to a Home for delinquent girls on a complaint from her mother, pronounced incorrigible by the judge.

Life hereafter was somewhat different from the "true soul" life she had just experienced. Rebellious at first, she subsided gradually into the institutional routine, although at times she would have outbreaks and strike at officers like an angry child. Opinions differed greatly as to Lillian's character. Attractive, refined, with artistic tastes, she seemed to the outward eye all that could be desired in any girl. On the other hand she was quick to pick up silliness, and got in with the "fast set" of the Home. There are degrees of badness even in a Home. She never hesitated about doing things "on the sly," although she was usually found out and punished for all she did.

On account of her artistic tastes and lack of physical strength for hard work, a place was found for her as lady's maid in a home where the lady of the house took a definite interest in her and gave her an opportunity to attend an art school evenings. She did exceedingly well with this work and her mistress became very fond of her. Yet her double nature appeared in full strength here. She had such a fun-loving nature that "being good all day" was an unnatural and too artificial a life. Fun "on the side" there always is in plenty for those who know how. "Tom" appeared on her horizon and her "soul life" with him became an important episode. "Tom" was a traveling man and ready for an "affair". He really became passionately devoted to the girl. He wrote her many letters and sent his picture. In one letter he said: "Oh, Lillian darling, I can-

not express to you what joy it gave me to be with you this afternoon, and how I enjoyed every minute of it! You were so sweet with me and are such a little sunbeam for company." This was the way she affected most men. They saw not the evil nature in her that her mother did, nor the weakmindedness that was the probation officer's view of her condition. "A sweet, lovable girlie" was the verdict of her friends.

But forbidden fruits bring results not desired. She was found out, and also detected in appearing at a party in her mistress's best gown. She even had been impersonating her mistress and had written letters in her name, little actress that she was! She was returned to the Home in disgrace. Her mistress was naturally disgusted with her lack of gratitude and her inability to walk the narrow path. The girl, when questioned later about these experiences seemed to consider them as merely mischievous escapades. Cannot many a reputable woman remember many school girl pranks, easily forgiven by kind parents?

Back in the Home she lost ambition and drifted into the worst that was offered. Sex nature, defrauded, must have an outlet, and love affairs among the girls were rampant. Yes, she *loved* a colored girl named Imogen. A large number of love notes were discovered. "Dear, darling Imogen,—If all the world were as good, and kind, and true as you, I should not be writing this letter. Dear Imogen, if I could tell you how *I love you*, and how sorry I am to fall in your opinion, as I surely shall when you hear what has happened. Imogen, sometimes when you pray, remember Birdie, won't you? She needs your prayers so much, for she cannot pray herself. I do not want to be wholly bad, and I have faith that God will hear you. . . . I will never leave you. One reason why I will not leave you is because I love you, and I know if I go out, I will only come back again to you. Yours forever, Birdie Hop-o-my-thumb." "To my own Imogen to the end,—Here I am writing my eyes out and it's moonlight. But what's the difference? I'd go through fire for you, honest, kid, I would, and you know that. Could it be true that you love me! Oh, how I wish it was true! Could there be a happier girl in all this world? Oh, I should say not. Good-night, my darling, sweet dreams! I'll lay awake and think about you. Birdie." "Imogen, my beloved,—Be true to me, my darling, and let my love abide with you, forever and ever, amen. I'm making something for your birthday. What day is it? Well, dearest, I guess you are sick of looking at my scribbling. I must close. With true love. Birdie."

Not only was she affected in this romantic way toward Imogen, but she soon became involved in an affair with a white girl, Nellie. Indeed, she had the faculty of winning the love of many, and was the recipient of countless notes and gifts. She was distinctly a leader among the girls and the most popular girl in the school. Thus she became involved in nearly all the mischief that was at hand, and consequently was not popular with the officers.

So it came about that a psychological study of her case was recommended. She stood 11-2 by the Binet test. The three questions missed were the dissected sentences in 11, and the long sentence and the problems in 12. In the association test she did very well, but showed some inclination to repeat the stimulus before giving the reaction word. Her reaction time was somewhat slow. Otherwise she seemed perfectly normal. She had practically completed a grammar school education, could write a good hand, but was quite careless and inaccurate in any book-work assigned. She was not a very good speller, made mistakes in short common words, and often made mistakes in English. As an experiment she was tried in stenography and type-writing. She could do good work on the type-writer when she tried, and in stenography she could learn when it was merely copying and memorizing. She was very careless and inaccurate in this also, and showed a tendency to deceive as to the time spent on her lesson. When she was asked to learn rules, she could memorize, but was troubled when asked to apply rules to particular cases, or to explain why a particular case came under some rule. That is, the application of a general principle to a particular case seemed beyond her level of intelligence.

The abnormality in Lillian seemed to consist of the perverse homo-sexual tendency, so that a study of her case by other means than tests seemed advisable. She was found to be very suggestible, and an attempt was made to help her by suggestion. She could be easily hypnotized, so easily that it indicated a somewhat neurotic constitution. She owned up to having "bad dreams" as she called them. The danger of indulging in the love affairs with the girls had been explained to her and she seemed to understand and to wish to overcome the evil tendencies within her. Indeed, she expressed herself as wishing to lead a perfect life. "Perfection" seemed her ideal, and she worried over her small misdemeanors. In these moods she would impress her friends as a very saint-like character. One could hardly believe that she had ever been guilty of any wrong. She loved to be praised and had the ability of representing her actions in the best possible light, for that is the kindest way to

regard what some would say were absolute falsehoods as to things that had happened. Most discouraging was this very characteristic, for it necessitated a double life. At the same time she was an ardent soul endeavoring to reform, and yet on the side she was a jolly good fellow with her "pals". Suggestive treatment was more effective in helping her to overcome her sexual tendencies than it was in helping her to be truthful. Truthful she simply could not be. She was also lacking in the ability to keep a definite end in view. Continuity of thought and purpose is not easy to acquire. She soon lost interest in her short-hand lessons, had become involved in another love affair, this time with an English girl just admitted to the Home, Anna Hobs. Lillian was quite carried away with her affection for this girl and deception was again necessary to satisfy her love and at the same time to "keep in" with her teacher.

Yet one cannot say that this deceitfulness came from an utterly corrupt nature, for she did honestly try to improve herself, as was shown by what she wrote in a composition book that was given her for the writing of verses and mottoes of the school work. This book she used also as a diary and often wrote out her own thoughts, and sometimes even wrote out her dreams. "I stayed after school today and had an hour talk with my teacher. I think her talks do me more good than the studying I do. Oh! I do wonder why I cannot get my short-hand lessons. I try, but it seems I cannot." "I received a letter from Nellie on the five o'clock recess. I do not know if her letter had anything to do with my bad dreams or not. I had a very bad dream and when I was dreaming it I was saying to myself: 'I must have bad dreams,' I fought with them and tried not to think of them. I got up and exercised and felt better when I went to bed again. I tried to think some good thoughts. While I was trying to think the good thoughts, the bad thoughts tried to come in and I would not let them. I fell asleep very soon and dreamed the same thing over again, and about the snakes twisting themselves about me. One snake had a red eye and the other a green, and held something very bright in its mouth. It looked like a diamond or something silver, and their eyes sparkled like costly gems. I was pulling myself away from them, but it seemed the more I pulled, the more it came about me. It was like fighting with the devil himself." Some days she had very good success in her endeavors to do what was right. "Thursday. Got up early, took my cold bath, took my physical culture, went to the office feeling more ready for work than ever. I am still trying to be a better girl in every way. I have held my tongue tight between my teeth

when I was tempted to be saucy. I have tried my best to-day and feel very satisfied. Had no dream."

The bad dreams stopped completely for awhile and Lillian showed herself a model in conduct. All might have ended smoothly had it not been that her love for Anna Hobs gained the upper hand. She gradually came to neglect all her duties for the chance of seeing and speaking to her darling. They wrote to each other, of course, and exchanged locks of hair. There was nothing Lillian would not do for Anna. This interest speedily brought her into conflict with the officers. A dispute arose as to her receiving a note. She saw the note in the officer's hand. It was to her from Anna. She completely lost control of herself, flew at the officer and struck her. This episode ended Lillian's career at the Home. A place was found for her outside and she is still trying "to do her best."

After she had gone a diary was found which she had never shown to any one, which contained some of her most cherished thoughts. A few extracts may throw some light on the under-current of emotion that had influenced her conduct. "It is said that time heals every thing. I have been waiting to see if it were so. Day by day my loss is greater, day by day my grief becomes more difficult to bear. I try to study and type-write. I read sometimes, or pretend to. I sit for hours with the open book before me, and never see a line printed there. O Love, if I could only dream to-night in the world with you. . . . I can be strong because I have known you. I can have courage because you were brave. I can be true because you were true. I can be tender because I love you. At last I understand. It is passion that cries out for continual assurance, for fresh sacrifices, for new proof. *Love* needs nothing but itself. Love can wait until life comes to its end, and trust to eternity, because it is of God. Good night, dear book to whom I tell my troubles." And again: "If Tom had only done as I asked him to, to tell the superintendent all, but no, he wanted everything done on the sly. Why should I think of him now? It must be because I care too. Ah! Yes. Our memory cannot be washed out, but our sins can."

It may, perhaps, be argued that this character presents nothing out of the ordinary, an emotional, impressionable girl, not intellectual, but artistically inclined. With great initiative and love of good times, she easily won the love of all about her. In a happy home, sheltered from temptation, not required to meet responsibilities, but made the recipient of love and devotion, would she not pass for a normal girl? Would she not be, not only popular

with her friends, but esteemed and respected? Are there not many such who are not called upon to brave life's storms? It is true that left to herself, she would fall a prey to the first temptation, but with a strong personality to depend upon and guide her, either a mother or a husband, she would be a loving, capable woman. Her faults were many. But is not the view point possible that it is normal to lie, to steal, and to love? Perfectly normal if these things are done to one's own advantage, but it is the sign of a weak mind when one acts in such a way that injury to one's self is sure to follow. We may, then, judge the abnormality in this case to be the easy yielding to impulse and the preference of the immediate to the far distant good.

REVIEWS AND CRITICISM

Manual of Mental and Physical Tests. By Guy Montrose Whipple, Ph.D. Ed. 2. Part I, Simpler Processes. Baltimore: Warwick and York, 1914. Pp. xvi+365.

In the preparation of this edition, Professor Whipple has followed a plan similar to that of the previous one. His aim has not been to make a complete compilation of tests, but to present those which seem to offer most promising results. Owing to the growing interest in the formulation of tests, the material to be presented is much more extensive and more detailed elucidation is essential. These two factors have led to a great increase in the bulk of this work, necessitating its publication in two volumes. The first volume includes the methods of measurement and the treatment of mathematical results, the tests of anthropometry and motor ability, as well as the tests of sensory acuity. When published, the second volume is to contain tests of the more complex processes such as imagination, general intelligence, etc.

The first volume is divided into seven chapters, the last four of which deal only with tests. Chapter I is a statement of the nature and purpose of mental tests, and the attempt is made to differentiate between the research-experiment and a test. The procedure of the two may be identical, the only difference being one of aim. The research-experiment is more or less theoretical, aiming to discover new facts and leading to the formulation of laws, while the test is practical, attempting to determine present mental status and possibilities for the future. The second chapter refers to the general rules for the carrying on of tests, and besides insisting on rigidly standardized conditions, emphasizes the desirability of using a number of tests, giving repetitions of those used, and having them answered orally rather than by writing. In the third chapter a discussion is presented which unfortunately is too often disregarded by those who use tests, and by those who attempt to standardize them. With all the discussion of general intelligence that we have had, few psychologists have recognized the necessity or value of those measures of variability and correlation. To the reviewer it seems certain that the most satisfactory way to ascertain whether or not there is such a thing as general intelligence is to obtain the coefficient of correlation for the results of an extended series of tests on a large number of individuals. By the size and sign of this coefficient we should be able to say definitely whether with a high degree of ability in one test there is a corresponding ability in all other tests. Commendation is due the author of this work for the presentation of these methods, and the only suggestion to be offered is that more space should be given to their elucidation.

The remaining chapters of the volume deal with the anthropometric tests, tests of physical and motor capacity, of sensory acuity, and of attention and perception. As the author states, not all the tests intended to determine the efficiency of these functions are included here, but only those are selected which seem to promise most satisfactory results. The presentation of each test includes a description of the necessary apparatus, the method of procedure in the applica-

tion of the test, the treatment of the data, with results and standards obtained by various investigators and whatever conclusions may be drawn in reference to the differences in mental status among the various people tested. Such a statement of standards and conclusions is very desirable for those who are looking up the development and value of a test, and the bibliography which has been extended and brought up to date makes it possible to verify and obtain in detail all the necessary material.

DAVID MITCHELL.

Stammering and Cognate Defects of Speech. By C. S. Bluemel. New York: G. E. Stechert and Co., 1913, 2 vols. Pp. x + 365 + 391.

Volume I of Mr. Bluemel's work deals with what he calls the psychology of stammering, Volume II with contemporaneous systems of treating stammering. It may be that the author has set himself an impossible task, in attempting to cover the whole ground of physiological psychology, including a discussion of brain structure, neuronal action, types of mental imagery, and the vast subject of aphasia, both congenital and traumatic, within the limits of a single volume, but there is obviously a wide discrepancy between his aim and his accomplishment. The psychology which he offers us is largely out of date. Moreover in condensing and simplifying his material he falls into many curious errors of statement, for example (page 71), "The memory-centers are remarkable in that they are located in the left hemisphere of the brain in right-handed persons, and in the right hemisphere in left-handed persons"; or again (page 161) where in speaking of aphasias he says, "Singing may be easier for these patients, because it is a mechanical rather than a thought process."

In his choice of nomenclature Mr. Bluemel does not appear to have been guided by the usage of any one group of authorities, whether German, English, or American, but seems to have worked out his own definitions from the way terms are used by laymen, chiefly by the quacks who advertise to cure "stammering". For instance he says, "It is easy enough to show that the difficulty of the stammerer is in some way connected with the production of the vowel, and that the consonant is not the obstacle," while on the other hand, "In *stuttering*, the consonant is produced repeatedly." Again, on page 209 he says, translating from H. Gutzman, "There are stammerers that never stumble in speech, but that stammer, nevertheless."

Believers in the new freedom for women will be more amused than shocked to hear Mr. Bluemel reiterating the old superstition, "Mentally, females vary little, and any extreme variation from the norm is seldom witnessed," but they will hardly dispute his statement, "Conversableness is, in general, greater in the female sex."

Volume II is almost entirely taken up with a discussion of various quack systems of curing speech defects, grouping their elements under such headings as respiration, vocalization, articulation, modes of enunciation, and so on. The chapter on psychological methods is perhaps the most valuable in the whole work. Pages 235 to 254, which deal with psychoanalysis as practiced by Freud, are particularly well written. Reserving this chapter, together with some useful

exercises in vocalization and articulation, then what remains of volume II could be dismissed in the summary statement—nearly all schools for stammerers are fraudulent. Forty-five pages are filled with a glossary, which along with some useful information includes much that is trivial if not misleading. It is not easy to understand why these words need to be defined in such a glossary—culminate, cursory, cutaneous, data, definition, degenerate, destitute, detriment, dexterity, dollar, dyspepsia, and ecstasy—to mention only a few. True, the author has remarked in his preface, that the glossary "has been made sufficiently comprehensive to render the book available to the youthful stammerer," but that youth is surely to be pitied, whether he stammer or speak fluently, who relies upon the definitions, "Ipecacuanha: a drug; a medicine," and again, "Bromide of potassium: a drug; a medicine," and assumes that a dose of one is equivalent to a dose of the other.

A. T.

NEWS AND COMMENT.

School and Society, a New Educational Weekly.

On January 2, 1915, the Science Press will begin the publication of a weekly educational journal entitled *School and Society*, which will be edited by Dr. J. McKeen Cattell, of Columbia University. The need has become evident for a journal appearing frequently, covering the whole field of education and its relations to the social order, combining high ethical and scientific standards with free discussion. Enough good articles on education are now presented to *Science* and *The Popular Science Monthly* to fill such a journal. Its establishment should contribute to the advancement of education as a science and to the adoption of the better methods for which there is evidence.

Educational Administration and Supervision.

Under this title a new periodical is to be edited by Lotus D. Coffman, Charles Hughes Johnston, David Snedden, and J. H. Van Sickle, assisted by a staff of twenty-one collaborators. *Educational Administration and Supervision* will be a monthly journal covering fields which can roughly be distinguished as follows: (1) state and county systems of education, including rural education and also educational legislation; (2) city school systems, including chiefly problems of city administration, supervision, management, reporting and educational statistics; (3) secondary education, including problems of organization, administration, inspection, curriculum making, and internal supervision, management and the pedagogy of the different subjects, and including also a consideration of these problems of higher education involving directly the interests of secondary education; and (4) elementary education, with the problems in this field analogous to those cited for secondary education.

In addition to these fairly distinct administrative fields there are those overlapping problems of vocational education and of school extension, the one including agricultural education, and all varieties of trade, of continuation, part-time,

and evening schools; and the other including broadly the problems of school hygiene, of the school as a social center, and of the school's co-operative agencies.

State school officers who are struggling with the issue of free textbooks, the subsidizing of special schools or departments, the certification of teachers, the basis for the distribution of school moneys, the inspection and standardization of schools, the erection of modern buildings; city superintendents who are studying the distribution of subject matter by grades, the time limit of subjects by grades, the preparation of a salary schedule, the means to be used in rating and promoting teachers, the relationship that should exist between a school board and the superintendent, the wider use of the school plant, the grading and promotion systems in vogue; high-school principals who are attempting to reorganize their schools in the light of shifting social demands, who are attempting to differentiate, interpret, adjust and extend their many curriculums, to provide supervised study, and to direct the social activities of the school; supervisors who are interested in improving their teachers in service and who wish to employ units and scales for measuring educational results; and rural school superintendents, confronted as they are with a multitude of complex problems, many of which must be solved at long range—all these will find this journal devoting itself to the questions which they are daily confronting.

In short, the ideal of the editors and the publishers is to issue each month educational matter of a distinctive character which will prove indispensable to all school administrators, to professors and students of school administration, and to the growing number of teachers who are beginning to read carefully and regularly current contributions of this thoroughgoing, dependable sort.

Educational Administration and Supervision will appear monthly, except July and August, beginning January, 1915. Ten issues will make the yearly volume of approximately 600 pages, published by Warwick & York, Inc., Baltimore, Md.

Toledo University, a Municipal University for the People.

Toledo University, the university of the city of Toledo, Ohio, is awake to the mission of a university as the educator of the people. Dr. A. Monroe Stowe, Dean of the Municipal College of Arts and Sciences, announces that Toledo University is planning to serve artisans, mechanics, engineers, and business men and women through its College of Industrial Science, while through its Municipal College of Arts and Science the University is planning to meet the needs of men and women, young and old. Volume I, number 1 of the Toledo University *Record-Herald*, is devoted to setting forth how this latter aim is to be accomplished.

"Municipalities as well as states," says Dr. Stowe, "are establishing colleges for the people. Where funds and conditions justify, these state and municipal colleges have given the regular four years of training. Where funds and conditions do not permit the establishment of full college course, there have been established colleges furnishing two years of training and instruction. These colleges are called junior colleges and are increasing very rapidly in our American cities. The junior college movement has also been strengthened by the demands of professional schools that our students have at least two years of a college

education." Some universities have consequently organized junior colleges to give the work of the first two years of the college course.

"The junior college has a threefold mission to perform," Dr. Stowe explains. "It prepares its students either (1) to continue their college work in a senior college; (2) to enter a professional school; or (3) to enter the life of the community as citizens well prepared to live efficient lives of service. While effective preparation for future college or professional school work is important, our Municipal Junior Colleges and the Junior Colleges of our Municipal Universities, if they are to justify their existence, must actually fit our students for more efficient living as individuals and as citizens."

The freshman and sophomore years of the Municipal College of Arts and Science have been organized into the Toledo University Junior College. A Junior College Arts diploma will be granted by that university to students who have successfully completed the two years' work. "An examination of the work of the Junior College," remarks Dr. Stowe, "will reveal the fact that this work is of such a character as to teach students many valuable lessons in living and to familiarize them with things they need to know if they are to live more efficiently in this twentieth century life. The student who completes this work and finds that he cannot continue his college course, will feel that his course has been well worth the time and energy he has spent upon it. If he desires to continue his college course, his Junior College diploma is evidence that he has satisfactorily completed two years of substantial college work and has the capacity and ability to profit from the final two years of college work either in Toledo University or any other college or university." The expenses are very small, amounting to only twenty dollars for a full year. Graduates of any of the Toledo high schools may enter upon presentation of the high school certificate.

In the freshman year the curriculum includes,—education, English language and literature, sociology, modern history, economics, political science, physical training, with mathematics and foreign languages as optional studies. The sophomore year includes physiology and hygiene (preventive measures), modern logic, three hours of foreign languages, physical training, either physics or chemistry, and from five to eight hours of electives.

Toledo University exists to be of service to the city of Toledo and to all of its citizens. The faculty of the university is being organized into a University Public Service Bureau, to discover ways in which the university may be of the greatest service to the city and its people, and to perform such services as the resources of the university will permit.

The Psychological Clinic

Copyright, 1915, by Lightner Witmer, Editor.

VOL. VIII, No. 8.

JANUARY 15, 1915

SIX WEEKS WITH A SUPPOSEDLY HOPELESS CASE.

By ALICE C. HINCKLEY, M.A.,

New Haven, Conn.

J. R., a boy of twelve, as a last resort was brought to New York by his parents for help, after they had tried many physicians in various parts of the country in vain. Here he was declared hopelessly deaf by a specialist, who recommended that he be placed in a school for the deaf. The schools refused to admit him on account of his repulsive appearance. The parents were referred to the writer who, with many misgivings, agreed to see what could be done.

The boy was slightly below normal in height, very thin and emaciated, probably due to exhaustion from continuous muscular contortions. There was general inco-ordination with spasticity. He was not able to hold up his head or sit alone until he was eight years old. He walked—if his spider-like movement could be so designated—with his feet about eighteen inches apart, and hands, cramped downward at wrist, waving sideways; his knees bent outward instead of forward, and indeed every joint seemed to work the wrong way. When sitting his head frequently lolled to one side, his eyes involuntarily rolled upward, and saliva ran from the mouth which hung open. He appeared idiotic. The parents said, however, that while he could neither hear nor talk, he understood them and was able to make himself understood for the most part by signs largely of his own devising. By agreement, he was to be under the care of a physician lest the mental stimulation should overtax his nervous system.

The clearest understanding of the treatment and progress of this case will probably be secured from a narration of the main incidents as they occurred in successive interviews. He was seen at least one hour each day, five days in the week. The first week was given to observation and experimentation with a view to working out some plan of procedure. My decision was to teach him at home where his setting would be natural and to keep him as serene mentally as was possible; then to present stimuli and observe his responses, encouraging or discouraging them as they were helpful

and constructive or harmful. His muscular activity was also followed closely.

Sept. 25.—In the first interview or lesson the following observations were made: Inco-ordination of muscles; rose to his feet suddenly and with precision; had better control of feet than of hands. He had a code of signs of his own. He was not accustomed to feed himself. He wanted a cantaloupe that he saw and I suggested to the mother that she hand it to him without any offer of help so that I might observe his behavior. She cut the melon in two and indicated by a gesture that the seeds must be removed. He went into the dining room and opened two drawers of the sideboard before he found the silver. He used the left hand for this; then took one fork and one spoon out with the left hand and placed them in the right. When he handed them to his mother he laughed heartily—he did not know which she wanted. At first he wanted both pieces, but agreed that I might have one. His piece was on a box before him while he sat on a chair. Leaning over to it was uncomfortable, so he grasped the melon in the left hand, and with a good deal of aiming ate it all. In using the spoon in the right hand, he grasped it in his fist, bowl downward, then experimented with the bowl upward, but returned to the first plan. He showed satisfaction when he succeeded in getting a spoonful into his mouth and looked up for approval. He objected when the rind was taken away, but accepted the explanation that it was no longer good. Instead of moving the box out of the way with his hands, he lifted his right leg over the box when he wished to get up.

He keeps busy; observes closely; and notices omissions in familiar things. He knows how to start and stop the automobile and likes the chauffeur. He manipulates the typewriter rather intelligently—puts in and removes the paper and imitates from a copy the words *mama*, *Cecille*, and a few other names, and indicates who they are. His mother has taught him this. He appears to remember fairly well.

He likes to make a noise by striking on something, a characteristic which Dr. Currier, of the New York Institute for the Deaf, finds quite common among the deaf, and attributes to the rhythm instinct. Piano playing, of the ragtime order, disturbs him—he says it hurts his head—but he makes no objection to the violin. A brass band was unnoticed until it was pointed out to him. He objects to loud talking into his ear.

His voice is soft, though without inflection, even in protest, and he laughs audibly. He shows his satisfaction by laughing. He wished his mother to draw a picture of a boat, but she could not understand the details of the one he had in mind, so he left the room

in disgust, went into another room and shut the door (to sulk, she said). When she went to find him, he came out laughing.

He has had some teeth filled and likes to play dentist to the rest of the family by using a discarded switchboard as an engine and a compass as forceps.

Sept. 26.—Tested his hearing with the Currier conversation tube, which comes in three sizes or degrees of amplification. Of these the larger two seemed to reach him. He laughed hysterically and seized the tube with both hands, refusing to let go until he was assured that he should have one. The proof that he heard was in his change of expression and his effort to repeat *mamma, papa, boat, Ethel*, when the speaker's lips were not in view. Whether the word had one or two syllables was clearly indicated. While experimenting with it by listening to his own voice, he used a succession of three tones in a rising scale, and was highly pleased at the sound of his voice.

When the tube was wrapped in paper he would allow no one else to carry the package, and as soon as he reached home he explained about the tubes to his sister and had her use them. It was interesting to see him show her how to place the opening horizontally below her mouth.

Sept. 27.—Dr. Currier very kindly tested the boy's hearing at the Institute for the Deaf. The tuning fork of lowest pitch could not be heard at all; the highest was heard most noticeably. The electrophone gave very good results and so did the dentaphone. He was delighted with the tests and was quick to see what was wanted of him. When he was particularly pleased (ostensibly on account of hearing) he put his finger into his ear, and once he tried very hard to talk. After the tuning fork test, the three forks were held out to him and he chose the one of highest pitch. After the whole test, all the apparatus used was spread out before him and he chose the same tuning fork. Testing showed that the hearing was a little better in the right ear. Dr. Currier thought he had considerable sensibility to vibration and that it was susceptible of development but would require long and persistent exercise. He cited instances where students of his own had had no more hearing at first, but by patient work had been able to enter college with normal individuals and complete the course with credit.

Sept. 30.—J. showed me, with great delight, how well he could blow his new harmonica. Then he produced his new slate and pencil. His efforts at using these were wildly inco-ordinate. I drew a crude outline of a boy and told him it was his picture. He asked me to put in features and pointed to each of his features as directions. He thought it a great joke.

We took a ride that lasted two hours. He sat between his mother and me and was unusually quiet physically. He enjoyed the moving crowd on the streets. He shouted when he saw a mule in a cage hoisted by a derrick to an upper story.

Oct. 1.—He had some new toys to show me; among them a toy telephone that we used. He wanted a boat drawn and his mother could not understand him, so he took the slate to his sister and gave the directions where to put the lines. It was the vessel on which he had come to New York. He brought the picture in great glee to show us and pointed out the pilot-house, the anchor and the propeller which he explained was broken. (This was true of their vessel.) He is very exact about details. Sometimes he laughs at their efforts to follow his directions, and at other times rubs their drawing out in impatience.

Oct. 2.—Our first formal lesson was with the slate, and wooden blocks one and a half inches square containing raised letters colored red and blue. The reverse side of these blocks showed uncolored figures of animals in relief.

His cap was shown. I placed the blocks to form the word, as a copy. He readily got the meaning and reproduced it with other blocks. He repeated this. I mixed all the blocks and had him make it from memory. He asked for the tube to hear the word and tried to say it, but without any resemblance. He asked to have it on the slate, so I printed it. I showed his father's cap and he made the word *cap* again. Then he asked for the words that meant coat, pants, engine. He insisted, so I made each word with blocks and he copied it twice, then heard it. He was very much disturbed because the *o* was blue while the rest of the letters were red, and could not see why a red *c* would not be better than a blue *o*. He worked in a good spirit for about half an hour.

Oct. 3.—J— was glad to see me. He was lying down when I arrived, which was quite unusual, though he is encouraged to lie down as much as he will. We went at once to our lesson. I tried him first from memory. While he got the right letters, placing them in the right order troubled him, so I helped and then the correct word was used as a copy. He soon tired and wanted to make *coat*. When I insisted on his doing the other once more, he complained that his head ached and his eyes hurt him. After he had made *coat* and heard it a few times, I arranged cushions on the floor for a bed and he lay very still for six minutes, and did not attempt to rise for ten minutes. He worked fifteen or twenty minutes but was evidently not feeling well.

Oct. 4.—He met me at the door and immediately began to tell me something about his blocks. His mother explained that yester-

day his father thought of the scheme of modifying a red *q* into an *o*, but he came in and caught his father defacing one of his blocks. He became very indignant, would have nothing to do with the mutilated block, put it and all the red letters into a box and insisted that they should be returned to the store and exchanged.

When I arrived, only the box of blue letters was on the table with his slate and pencil. He took the blue *o* out and did much explaining about it, but I asked for the other box. He picked out the red substitute *o*, showed it to me with much grumbling and pushed it and all the red ones away.

This mood persisted throughout the whole lesson. In the hope of diverting him I made the word *pants* which he had asked for in a previous lesson. He wanted to know the word for pants, but kept an eye, as it were, on the offending letter. I used only blue ones. He worked nearly fifteen minutes matching up the letters. I printed the word on the slate and told it to him through the tube, which elicited the usual delight.

He tried to make *cap* and chose the right letters, but was slow about getting them in the right order, so I suggested it.

The word *coat* caused trouble. He refused to use the red *o* though he saw it, and even refused to use that block for the *a* that was on another side. I placed the red *o* and the blue *o* before him and he chose the blue. Then we both laughed.

I printed the words so far studied on a strip of cardboard to be saved as copies. He made the word *box* once and I gave him the sound. He liked it and repeated the word fairly well, omitting the *x*. The lesson comprised thirty minutes of attentive work.

Oct. 5.—J— was perceptibly calmer. The lolling of the head to one side had almost disappeared. His sensitiveness to the piano was tested by placing the palms of his hands against the piano box while a succession of chords and an easy flowing rhythm were played. He was especially pleased with the latter. When the playing first began he took his harmonica from his pocket and began blowing it, then he vocalized as he blew. He used his voice more frequently than formerly.

On account of the analytic process involved, and the effort necessary to hold the word in mind while its elements are found, with the quick fatigue he has shown in doing it, I have decided to keep his mind in as easy and natural a condition as possible—like that of a little child before it has learned to talk. He must be told the names of things, as he wants them; and hear some of the usual conversation about the home.

Oct. 7.—He was at breakfast when I arrived. When he came in I took the tube and said "Good-morning." He smiled. I said,

"What did you have for breakfast?" He began telling me by signs that there was a maid in the kitchen and she was black. He led me to the kitchen; where she was washing dishes. He wanted to hear the name of a glass and of other things. He took me into the dining-room to ask the name of the cups belonging to a crystal punch set. I told him that was a glass, too. He asked the name of other things he wanted to know, but when I offered to name some fine apples sitting on the table, he would not listen.

In the kitchen I named knife, and he took it out of my hand and pretended to stab himself; then laughed heartily at my pretended alarm. I showed him some milk, naming it; and with my lips out of his sight I said, "Do you want some milk?" He said "mm," nodded his head (his usual assent) and waited expectantly while it was poured into a glass for him. He asked the name of the fire hose hanging in the hall—he demonstrated that he knew its use—also the name of the carpet-sweeper, which he opened to show me how to get the dust out. He asked the name of the dust. He made some vocal effort for nearly everything that was told him. He wanted the name for his finger, so I said, "That is *your* finger, this is *my* finger," with appropriate gestures.

Oct. 8.—He showed me some new blocks, oblong, with cars and engines on one side. These he made into trains. He was so closely occupied I thought it a good time to print some of the words we had used the day before. In a little while he came over to see what I was doing and for some reason disapproved of it. He slapped his hand down on the printed words and tried to rub them out, then seized the sheet of pasteboard as if to tear it. His mother took it away from him and removed both it and the type from the room. He went back to his cars, still grumbling and wishing to destroy the cardboard, and finally began to cry. Nothing would pacify him till his mother told him she would tear it up. In a little while his good humor gave way and he insisted on the destruction of the cardboard, so it was produced and he tore it up with great satisfaction. He seemed generally out of sorts.

Oct. 9.—No reference was made to the printing. He did not wish to use the tube—said it hurt his ears. He heard my voice without it, several times, when I called him and when I told him the names, always making some vocal effort. Once he indicated that I talked too loud—sometimes he pretended not to hear, then looked around, laughing, and pleased with himself.

When I called him from a distance about eight feet, with his back to me, there was a pause of about two seconds before he looked around. The response, even when he was facing me and nearer, showed the same definite pause.

His muscular action was more unsettled than for some days previous. He used his left hand a little more certainly.

Oct. 10.—He played with the new blocks but refused the tube, making gestures to his right ear and putting his finger into it. He seemed to hear some things I said and tried to repeat them. Once he put his hand back of his right ear to catch a word.

He called my attention to the fact that he had his feet crossed one over the other. Previously when he worked at the table his feet were rigidly stretched out wide apart and waved about with every effort of his hands. From that position he moved his feet easily well back under the chair and resting on the toes. He sat in a camp chair which was nearly low enough to allow the whole foot to rest on the floor.

Once he gave a prolonged cooing sound (like a baby) when he was delighted, then talked off a whole paragraph of vowel sounds, working the lips to the shape or position for *w*, with rising and falling inflection, and gesticulating to help out his meaning. He works his lips, tongue, and facial muscles a good deal, suggesting the involuntary movements of an infant. He wiped his harmonica on his stocking and offered it to me to play, but he could not hear it.

When he walked, I found the new fidgety movement was due to his knees bending forward instead of sideways as before. It is a much more limber movement. The right foot lifts higher than the left.

He brought out his Indian suit, head-gear, bow and arrows and we played Indian. He did the sighting and I the shooting. He used his doll as a target. He heard the names of these things without the tube and tried to say them—said “bow” fairly well.

He did not want me to leave and held my hand with both of his. Then he tried to squeeze hard enough to make me cry out. At the first he could not grasp, so he was using one of his new accomplishments.

Oct. 11.—The knee movement was not so regular as on the previous day. He played quietly with the square blocks, animal side up, sitting in the camp chair, with his feet comparatively quiet. He selected the animals he liked and pushed the others away. He wanted to know the names of some of them, but not with the tube. He seemed to hear my voice at medium pitch and intensity and made some effort to say each word. For the gun and the cock he seemed to try to imitate their sound. At sight of the goat, he went through the pantomime of butting. After I said its name several times, he leaned his left ear toward me, thus turning his eyes away. I said it again and he repeated “go” distinctly.

He gave one or two shrieks of delight with mouth open very wide. He now has a low, childish, rippling laugh.

Oct. 14.—J— was in a mischievous mood. The knee movement fluctuated from the old to the new.

We played dominos about fifteen minutes. He matched them up fairly well, but wanted to throw away the blank one until he saw how it was used. Made no objection to my turn at playing. When his supply did not afford one that would match, he borrowed one of mine with my permission: they were all lying face upward.

Once he shook his right fist in my face for fun and it touched my nose, so I immediately became an Indian and shot him. He used the canvas seat of a chair held in his lap as a barricade and shrieked as I crept up to it with my hand shading my eyes (his sign for Indian).

He put the chair on the table and piled blocks on the seat of it, then gradually tipped the chair until they all slid to the floor. He tried putting two chairs on the table. He made a tent by stretching a buffalo robe from a chair to a settee, sat under this on a cushion, and called his mother to find him.

He motioned his mother out of the room then wanted me to follow him to the kitchen. There he got his tin pail tied to a rope which he is very anxious to let down on the outside of the window. His mother told him he would lose it, so he secured the door of her room with the rope to prevent her interfering or seeing what he was doing.

In the forenoon he had heard the cannon of the naval review on the Hudson by laying his mouth-piece of his speaking tube over the window sill (he did not appear to hear the sound without it). Now, the cannon firing began again, and he gave no indication of hearing it. As soon as he was told of it, he got his tube, placed it to his ear and handed me both mouth-pieces. I placed them, well apart, outside the window (about three blocks from the river) and with the first shot he gave a great start, then laughed heartily—as he did after each report—changing the tube from one ear to the other.

The consonant sounds which he has produced so far are initial *m, b, g* (once).

His eyes at times become dull and expressionless with the iris inclined upward. This occurs less frequently than formerly and after prolonged attention. It seems now an indication of fatigue, whereas at first the attentive expression was the unusual one, lasting one or two seconds at a time. He fell twice during the hour.

Oct. 15.—The lesson was largely with the blocks. He set them in rows with the two similar blocks together and worked hard on the

words *one* (wū'), *two* (oo). He also tried *boy* (bū), *girl* (gū'i, after a long struggle in his throat). He attempted the names of all the animals except the elephant and the camel. The first effort on the word *lion* was by slowly opening his mouth as wide as he could and giving a deep explosive sound. He was delighted with this achievement and so was I, but whether it was the word or a roar is hard to say.

He set up a row of animals and knocked them down with blocks after much aiming. He aimed at the nose of the monkey and the mouth of the goose (indicating this by pointing to his own features) and laughed in anticipation. For missiles he chose blocks having engines and guns on them. He held up fingers to show how many were knocked off each time. When one fell to the floor I told him to say "Get it," and, as soon as he made the effort, I picked it up. The effort was only a double grunt.

Oct. 16.—I found him in bed as the result of a serious fall on the floor the evening before. There was an ugly cut on his head near the Broca speech region and another on his chin in which the doctor took a stitch. During this performance he was very heroic but extremely nervous.

I did not encourage him to talk much and nothing new developed. He was in good spirits and had an unusually animated expression.

The tube was not used. We played with the blocks and he got some excellent lip exercise in his effort to say *one*, *two*. It amused him to see my lips form a circle for *one* and he imitated the movement about eight times, each time ending in a laugh. The successive tension and relaxation of the lips may have given him the impression that I was laughing. He made a great throat struggle over the *two*, and it came out "oo." He thought he had said it right and I applauded.

Oct. 17.—Again the tube was not used. J—— was perfectly contented and unusually composed in bed. He enjoyed a picture book containing firemen, engines, and ladders, and made his usual effort to repeat words after me; but all his communication was by signs.

He showed me by the sample sheet that he wanted me to make 9 on a magnetic toy that has movable bits of tin manipulated by a horseshoe magnet. In his delight he went off into a combined squeal and shriek, quavering up and down a bit, crescendo and short stop. This seems to have taken the place of the cooing of a few days before. He also had his eyes turned away from the object, with a fixed, wrapt expression.

I named the numbers to nine and he gave a little grunt after

each. I called him several times and he looked around in a roguish way. Once he tapped his lips in fun, to mean that he heard but would not answer.

Oct. 18.—The tube was not used. His mother reported that he had signified to her that the ear-piece of the tube was too small and went too far into his ear. He wanted it made larger and one of the tubes taken off (probably for convenience in carrying it about).

He told me the doctor had been there and opened the place on his head. This was done with a lancet, but he hardly murmured. He let the doctor do it while his mother was out of the room. A little further opening was necessary after she returned and he asked her to hold his hand.

He was in good spirits. We played dominos, and he matched them fairly well. I counted the spots for him. He struggled with *one, two*—with about the same result as formerly. Several times he matched wrong numbers, to see what I would do. He insisted that *two and one* matched *three and blank*.

He tried to tell me something about the wings on my hat, and when I could not get his meaning he yelled loudly until his mother came to explain. Once or twice he took spells of yelling, only one-tone vowel sounds ending with a short stop and sometimes ending in a laugh. He seemed to enjoy the sound of his own voice. He uses his voice nearly all the time while he is relating things by gesture.

Oct. 21.—J—Had had fever two days and was not yet entirely free from it. He was still languid, but was glad to see me, and in a few minutes brightened up and told me the doctor had been to see him and was coming again at two o'clock, showing the number on his watch. He had me use the watch to count his pulse, but pretty soon he began to play pranks by wiggling his fingers so I could not count. I shook my fist at those fingers, which amused him and served as a challenge to keep it up. He began his little squeal, then experimented with different tones (loud staccato in middle range), then went as low as he could and lower than he could give any clear tone, lowering the chin to get a throaty effect,—the low tones on *ü*, the high ones on *ē* with lips moving slightly from tense to lax. He gives *a*, in "mämä," "bä-bä" (papa), equal force on each syllable.

He wanted to tell about the ships and introduced the subject by imitating the guns,—a deep explosive sound on the vowel sound of French (*f*)eu or German *ä* rather than our *oo*. Said "gū" (gun) with exhausted breath and uncertain vocalization, "bo" (boat) clearly after much preparation and effort at imitation.

We played "Ding, dong, bell" with his watch on a string. I showed him by rhythmic movement of my finger that the watch said "Tick, tick" and asked him if he wanted to hear it. I put it against his right ear, and both his delight and the tick—tick movement of his hand showed he heard it. I caught its rhythm and said "tick, tick" with it, to make certain he would get the real meaning in a correct association. Afterward, I put the watch under the pillow at the same ear and he heard it. I had first experimented with the watch *under* the pillow and he gave no indication of hearing it. He asked me to put the watch under the pillow when we finished playing with it. He patted my cheek as a suggestion that he wished to have his cheek patted.

For the first time, his tongue appeared between his teeth. It moves a good deal, but well back in the mouth. This time the movement was a random one, but I followed the cue by extending my tongue and placing it to the upper lip. He thought that very funny and worked his tongue but it did not come out. Once he clapped his hands audibly, the whole palms touching.

Oct. 22.—He was still in bed but without fever. His eyes were still swollen, the wound on his head discharging freely. He was languid when I came in, but soon became so excited that I persuaded him to quiet down.

He did his vocal exercise almost the same as at the previous lesson; this time apropos of nothing, unless to challenge me to a frolic.

He fired guns on "eu"; said "mama"; and made all sorts of efforts to explain something to me. His lips are becoming very flexible and once his tongue showed itself. When I repeated my tongue exercise he suddenly reached out his left hand and knocked my chin up to make me bite my tongue. He laughed and became so excited I told him he must rest and sat back in my chair out of his reach. He beckoned me to come closer and quick as a flash he seized my wrist and held me.

He said "m-by" (good-by).

Oct. 23.—He had just got up for the first time since the accident, and was walking about the house. His muscular action was weak and uncertain, but his knees were bending forward with feet about eight inches apart. There was exaggerated and backward-bending movement of the back and arms.

He was glad to see me and expressed great satisfaction at being out of bed. I took him a picture of a little boy playing doctor to a dog which was covered up in bed. He shrieked a little and tried to say *dog*, but could not get the *d* at all. He makes strenuous efforts

to talk on a continuous strain, and to emphasize and explain both by gestures and with sounds (lip, tongue, and throat movements).

We played dominos most of the time,—apportioned them by each taking one alternately. He has very little trouble matching them. I showed him the number of spots and gave the name each time. He tried very hard to say them. For *four* and *five* he placed his lower lip correctly but got no breath force on the *f*. Both sounded like "bvō;" once he said "bvi." He worked hard for *three* and for the first time consciously placed his tongue well out between his teeth. When he drew it back quickly, instead of the right word, it ended in *mama* ("thmama"). He felt as though he had gained a victory. Six was impossible—only *i*. For *play* he said "pay," clearly. For *pick it up* he said "pl."

His hearing was unusually acute. Whenever the elevator door (in the hall, with an intervening door closed) was opened or closed he looked in that direction. Once or twice he indicated that some one was at the door, but I told him, by signs, it was the elevator. Once he insisted that he heard the door-knob turn, and it was the door to the opposite apartment across the hall. He heard his mother's step as she came down the long hall from the kitchen and stopped playing while he waited for her to come. A shrill whistle sounded in the neighborhood. He paid no attention to it until I reproduced the sound, when he laughed, waved his hand toward the window and took up the same tone.

Oct. 24.—I found him in bed although it was early in the afternoon. He was playful but not so boisterous as the day before. Had two spells of yelling, but each time it was his usual call for his mother with variations. We played with the blocks. He gave more continuous and analytic effort at reproducing words than ever before, though there was little improvement in the result.

Some of the words he tried were: *hat*, å; *wing*, in (nasal); *bird*, bå; *four*, pfō; *bump*, bum (nasal); *papa*, båbå; *train whistle*, oo; something falling down, oöi (chest sound); *two*, oo; *elephant*, å; *play*, bå; *five*, vä.

He likes to pretend he does not hear, looks away, and laughs. He tapped his lips, turned away and stopped his ear with his finger; then looked around laughing. I asked him if he wanted me to stop talking and he said "tin" (yes). I held my mouth shut with my hand, to his great amusement. Pretty soon he wanted me to talk and made every effort to persuade me to remove my hand, but I pretended not to understand. He called his mother and indicated to her that I would tell what he wanted. I moved a little nearer to him and quick as a flash he snatched my hand away in great delight.

He was in the front of a long apartment and heard his mother laughing quite down the hall in the dining room. He also heard her call him from the next room.

Oct. 25.—He was in the kitchen. Made some protest when his mother told him to come in, but forgot it when he saw me. Shook hands with a wide slap and hard squeeze.

The play was with the long blocks and the slate. I made an outline of the blocks on the slate and drew pictures of the different kinds of cars on them. The words *wheel*, *steps*, *smoke*, *bell*, *window*, *man*, *play*, *slate*, he tried without noticeable improvement. Instead of leaning toward me, as formerly, to hear better, he put his left arm around my shoulders and drew me nearer to his left ear, then turned his right ear to get the same word.

We practiced a little on elementary sounds like *p*, *s*, *k*, *sh*, as they were needed. He gave the *g* in *goodbye*, but faintly. He has a good understanding of what is required of him, but the muscles do not respond correctly. Sometimes he thought he had said the word when there was no resemblance to it. He did not yell so much. His tongue is improving in flexibility. Eyes have good expression and are under perfect control. Knees bend forward; not much improvement in arm movements.

Oct. 28.—We played dominos, but he was too unsettled from an outing he had had to give much connected speech effort. I did most of the talking, repeating a given expression in connection with the act:—as, “You take one,” “I take one,” “now,” “get it,” “my turn,” “your turn,” “sit down,” “count;” “one, two, three, four;” “play;” etc.

I was talking to him about his pocketful of letters and he allowed me to use the tube. While we used it I whistled softly a little call. That pleased him and he put his mouth into shape, but no whistle came. He produced the same tone in a little shriek and laughed; then said something that sounded like “puppy,” but I had never heard him say it before.

Oct. 29.—J—opened the door for me and showed me that he had heard the bell,—repeated the word *bell* (“bĕ”) after me. He was in fine spirits and ready to try anything. The tongue came well out in trying to say *three*; intelligent effort in *four* and *five*, but without appreciable improvement in the result.

We played train with the dominos and his notion was to have the cars run off the table into a box. This was utilized for *too*, “ch, ch,” *bump* (“bûm”), *down*, *under*, *out*, *get it*. He turned one ear and then the other to catch the sound of words. We used the tube for some of them, especially *get*, and I placed his hand on my throat to

feel the vibration. He wanted me to feel his throat while he did it. I whistled softly into the tube, but he did not try to imitate. He had one short shrieking spell, the first in several days.

He made the long blocks into trains and ran the cars off the table. He asked for the square blocks and, for the first time since our lessons began, he built one upon the other. Because his uncontrollable movements kept knocking them down he asked me to do it. I built something like a fireplace and chimney, then asked him what it was and he made his sign for Santa Claus. When he had enough of it, he used it for a target. The blocks would not go straight enough to knock it down, so he kicked the under side of the table till it fell.

He tried most of the old words. He came near crying when it was time for my departure, but was pacified when his mother told him I had to go and see another little boy. I told him I would come back tomorrow (he said "mδ"). He shook hands and said "oo-by."

Oct. 30.—His sister was practicing the violin when I arrived. The tones were hard and grating but I had her continue to see if he could hear it. He indicated that he did hear it and dismissed her and the violin from the room,—would none of them. My purpose was to have him get the soft tones through the tube. He had no patience with it. I was uncertain of the cause, whether it was that she does not make pleasing tones,—he always objects to her playing (?),—or he did not wish her to interrupt our game.

This incident seemed to make an unpleasant beginning for our lesson. He was more easily ruffled than usual; gave up more quickly; and once, when I wanted him to practice a sound, he said his head hurt.

We played dominos. Instead of making his usual effort to say "Get it," when one fell to the floor, he began to cry for it. I did not pick it up, and when he began to yell for his mother to get it for him I showed him how to call her by saying "Mama." As soon as she handed him the domino he was all smiles again. I thought there might be an exultant feeling; but later, when a block fell, he made his usual effort to say "Get it." He wished to play more than to talk. There was no particular advance in articulation. The tongue was flexible. The expression of his eyes was good but a little weary (he had not long been out of bed). He used the right hand more than usual, and the first fingers of both hands in grasping things (formerly his grasp has been with thumb and second finger). In extending the tongue it deflects slightly to the left.

Oct. 31.—I found him playing with a collection of cinders which

he indicated had been gathered on the roof. He showed me how high he had gone and how far he could see—tried to repeat *high, roof, cinders, far, river, water, see*. He heard some of these words through the tube, which he had been using to listen to a little whistling sound in the radiator. He tried to reproduce this sound. It was on a very high key.

We played with the dominos. J—— was interested in getting them equally divided between us and had me check off with paper and pencil the number each of us received. After he had counted his fourteen dominos and mine, and had seen the figures representing the numbers, he asked me to extend the figures to successively higher numbers. Then he wished to see the names of different people as he indicated them written by the side of these figures. This made a column of printed names which he extended to sixteen. These he repeated several times by imitation, though he sometimes objected to saying a word more than once. His articulation was not particularly clear on account of exaggerated throat activity. He extended his tongue when asked to do so. His expression was intelligent. For the first time, he heard the clock strike (a very soft, musical tone). It was two o'clock, and at the second stroke I called his attention to it. He heard it at once. To my surprise, the clock continued striking at least twelve times. He heard each stroke; laughed, pointed to the clock, then to his right ear which was toward the clock.

Nov. 1.—A very rainy day. J—— was glad to see me and tried to say *rain, wet, water*. He played violently for an hour with the long blocks—making them into a train and running them over the edge of the table into a box and later into a wire tray. This he emptied on the table with as much noise as possible, imitating the sound. He whistled for the train on a rather low-pitched tone, tried to say *over* when turning the blocks out of the tray, and *horse* when the blocks were drawn from under the tray through the doorway made by the open place in its rim.

So far as I know he has never voluntarily used the name of a thing, but makes the gesture for it accompanied by a general open sort of sound—nearly always *ü*, or *oo*. A few times he has said *abä*.

In this lesson he gave his usual yell for his mother, ending it with “mama” in a lower tone. When a block fell, he refused to say “get it” and picked it up himself rather than make the effort:—said it hurt his head (his usual excuse when he wishes to have his own way). I smiled and said, “James is a big boy to get it.”

For several days he has been very emotional, falling over on the couch when amused and crying when displeased; also more inclined

to play than to make a serious effort at talking. He made some effort at most of the words, but the throaty action was prominent. Recognized most of the names on the list made in a previous lesson, as shown by signs, also tried to repeat the words. For *sit down* he said "ow" very well, twice.

He heard the clock again, after his attention was directed to it. He enjoyed the sound of a call bell which he tapped with a good deal of difficulty and with undue force. He wished me to *ring* the bell, which I did after he tried to say the two words.

When luncheon was ready he heard the rather soft and indistinct sound of a little call bell in the dining room, some distance down the hall. He looked up, reached for his bell and began to ring it.

For several days he has shown signs of wilfulness and expects me to indulge him. This would probably disappear if lessons were given away from home, in more of a school atmosphere.

At this point, for unforeseen reasons, the work was discontinued.

This case is interesting from several view points. While the primary purpose was intellectual development (by means of speech, if possible; and speech was to be acquired by auditory means, if possible), the emotional and the physiological progress were equally marked.

The very first lesson was effective. In fact, the trial of the speaking tube in the factory, when he heard a sound for the first time, seemed the starting point for improvement. A new and inspiring experience had entered his consciousness, and this opened up a new avenue to information that the instinct of curiosity was not slow to appropriate.

He was too busy getting original impressions of real things, as well as an acquaintance with their auditory and oral representatives, to admit of training in symbols. Before he had heard the names of many things, I experimented with large print letters and he learned a few short words well enough to reproduce them with lettered blocks. All of the directions were given by signs and to him it was a game. He had no patience with anything like drill, or having the same words over, but wanted me to print the names of things he chose, and among these were *elephant*, *locomotive*, *automobile*, *fire-engine*, and the like.

The method of applied or directive psychology soon gave place to a passive, sustaining psychology that provided the stimulating situation and then kept hands off as long as the spontaneous response

tended toward wholesome development. This plan revealed the fact that he was in the intellectual stage of curiosity, imitation, dramatization, and pranks of all kinds; and toward the close of the period of treatment he showed a tendency toward teasing and wilfulness. He was very methodical in the arrangement and care of his possessions and held tenaciously to an idea. He learned to await his turn at a game of dominos, but he did not like to be the first out; he always borrowed from me, though not without getting my permission.

It was not my purpose to return to the symbols until he had learned to use voluntarily the spoken names of objects. This he had not yet done beyond the one word *mama* a few times in a soft voice (his usual call for his mother was a loud, harsh cry). He readily repeated a number of words that were spoken to him, but when he wanted anything he used his own sign for it. Six weeks was evidently not long enough to replace the old habit of years' standing.

In the care of this case I was especially fortunate in having the assistance and sympathetic co-operation of a physician of unusual personality and skill, and the development achieved in so short a time is doubtless due to this combined observation and treatment of both mind and body.

IMPROVEMENT OF DENTAL HYGIENE IN THE HIGH SCHOOL, WITH RELATION TO EFFICIENCY.

By WILFRED L. FOSTER, M.D.

Brooklyn, N. Y.

That the work done in many schools to improve the condition of the pupils' teeth does secure good results is well known, but how great an improvement can be or at any time has been secured has not been mathematically stated up to the present time, as far as I know. It is my purpose here to state as definitely as possible under the present circumstances the amount of improvement that has been obtained in one of the high schools of New York City.

In this high school it has been customary for the last five or six years, in the physical training work, to base part of the pupils' marks in personal hygiene on the condition of the teeth. If the pupils' teeth needed filling or cleaning at the time he was examined his mark was reduced, but if the teeth were in good condition the full mark was given. In all cases where dental treatment was needed the matter was mentioned to the pupil at the time of the examination together with the fact that a bad condition of his teeth would lower his class standing.

Since an examination in personal hygiene is part of the physical training course affecting all the students of the school every ten weeks, it can readily be seen that a considerable improvement might be obtained by drawing the students' attention to the condition of their teeth. In addition to this ten-weekly test, short talks are given on care of teeth in the first term and in the physical examination of each student each year the number of decayed teeth is recorded and the records kept.

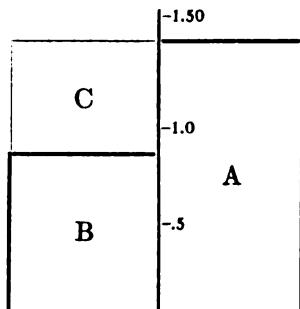
From these card records we find that there is a *total improvement of 41 per cent during the course*; that is, that the fourth year students show an improvement of 41 per cent over the entering students with respect to the condition of their teeth, basing the calculation on the number of decayed teeth.

Especially notable is the improvement of the group of boys whose teeth were all in good condition; that is, whose teeth showed no unfilled areas of decay. In the entering class, the percentage of pupils who had no decayed teeth was found to be 37.9 per cent, but in the fourth year class the percentage of pupils who had no decayed

teeth was 63.3 per cent—an improvement of 25.4 per cent in this group. Improvement was noted also in the other groups of these classifications, as one may easily see by glancing over the accompanying tables.

TABLE I.

	No. Examined	No. of Decayed Teeth.	Average No. to each boy (theoretical)
FIRST TERM BOYS.....	507	693	1.3668
SEVENTH AND EIGHTH TERM			
BOYS	126	101	.8015
Average improvement per boy.....			.5653
Percentage of improvement of seventh and eighth term boys			.5653
		41% or	1.3668



Graphic Representation of Average Number of Decayed Teeth of
 A—1st term boys
 B—7th and 8th term boys
 C—Improvement

TABLE II.

Percentage Table showing the Condition of the Teeth of Students of Different Grades of the High School.

	1st Term	2d Term	3d Term	4th Term	5th Term	6th Term	7th and 8th
Boys with teeth showing no unfilled areas of decay	37.9	49.1	50.8	52.7	50.8	61.9	60.3
Number of Boys showing							
One cavity.....	23.3	17.6	19.5	17.6	20.1	15.1	20.7
Two cavities.....	17.9	14.6	10.9	15.5	13.1	7.9	7.9
Three cavities.....	10.0	10.5	9.7	5.7	8.2	7.2	4.8
Four cavities.....	6.9	5.4	3.4	6.5	3.3	4.3	2.3
Five (or more cavities)	4.0	2.8	5.7	2.0	4.5	3.6	4.0
	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total No. examined, 2069	507	460	348	245	244	139	126

TABLE III.

First Term Boys		Per cent.	7th and 8th Term Boys		Per cent Improve- ment
Number	Decayed teeth		Per cent.	Number	
Number with no decayed teeth.....	192	37.9	76	60.3	25.4
Number with one decayed tooth.....	118	23.3	26	20.7	2.6
Number with two decayed teeth.....	91	17.7	10	7.9	9.6
Number with three decayed teeth.....	51	10.0	6	4.8	5.2
Number with four decayed teeth.....	35	6.9	3	2.3	4.6
Number with five or more decayed teeth.....	20	4.0	5	40.0	0.0
	507	100.0	126	100.0	

In spite of the work done for the betterment of personal hygiene in the schools, it is necessary to take into account that there are other factors working at the same time. The condition of an individual's teeth may be to a fair extent an index of his home surroundings and his physical fitness. For example, the boy who is poorly fed and poorly clothed is less apt to have teeth in good condition than the boy who comes from a well-to-do family. In order to throw light upon this matter, the records of the condition of the teeth of boys who passed every subject every term were brought together, excluding the 7th and 8th terms. These boys, according to their academic standing, may be considered the more efficient pupils. A comparison of these more efficient boys with the entering class shows a condition of teeth that is much better than the first term boys, as the table below indicates:

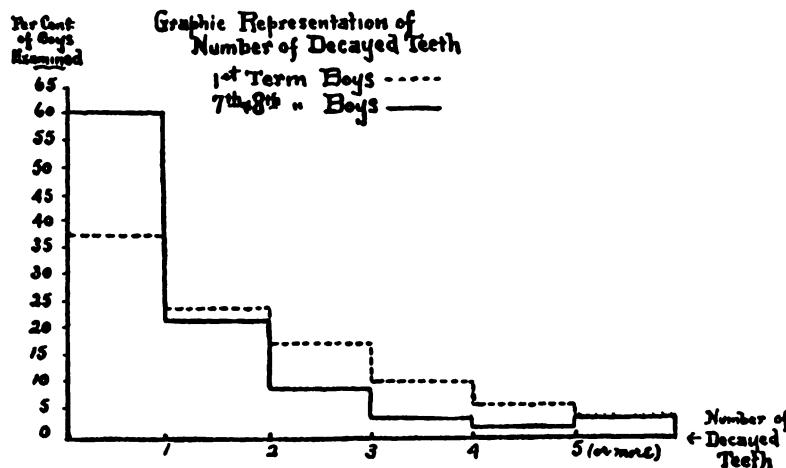
BOYS PASSING IN ALL SUBJECTS

		Per cent.
Number showing no decayed teeth.....	218	50.6
" " one decayed tooth.....	86	20.0
" " two decayed teeth.....	58	13.5
" " three decayed teeth.....	35	8.1
" " four decayed teeth.....	20	4.6
" " five or more decayed teeth.....	14	3.2
	431	100.0

The more efficient boy then keeps his teeth in better condition than the average first term boy.

The high school boy who reaches the fourth year and who by his survival has thus proven his efficiency (for high school "mortality" is very high), bears out the same idea that the more efficient individual

is, on the average, in better condition with respect to his personal hygiene.



Whether the 41 per cent which was noted in the case of the fourth year pupils, is due entirely to the hygiene work of the school or is due partly to other factors which are indices of home surroundings or physical fitness, it is none the less desirable when we realize that a better hygienic condition is characteristic of the efficient individual, and that it is a necessary part of the armor of success. Even from the standpoint of efficiency, therefore, we are justified in these efforts we are making for better personal hygiene; and as soon as we can convince parents that the success of the children depends to a very considerable degree upon their better hygienic condition, just so soon can we hope to improve more easily the personal hygiene of our pupils.

OBSTRUCTED BREATHING AND MEMORY.

BY FELIX ARSOLD, PH.D.,

Principal Public School No. 90, New York City.

Obstructed breathing may be considered in part as a form of distraction similar to irritating woolen clothing, uncomfortable seat, tiresome teaching, and other untoward conditions in the classroom. In part it operates as a devitalizing influence through diminution of the supply of oxygen. It may be due to adenoid growths. More commonly it is due to lack of ordinary cleanliness. Obstructed breathing is easily produced by plugging one of the nostrils. In my tests I used two forms of obstruction. One was a plug (P) made of antiseptic cotton gauze, rolled to the thickness of a finger, and about two inches in length. This plug was pushed up the right nostril of the subject. The second form of obstruction consisted of a piece of cardboard two inches long, and about half an inch wide. This was bent lengthwise at right angles and inserted in the right nostril of the subject. This hollow plug (H) acted as a distraction without interfering with the breathing. The solid plug acted in both ways, as a distraction, and as an obstruction to breathing.

The subjects were school boys taken from grades 5B through 8A. They entered willingly into the spirit of the thing. They tried to get as good results as possible and seemed pleased to co-operate. The pupils were tested between 2:30 and 3 p. m. from April 11 to June 2, 1910. In designating the pupils by letters of the alphabet, I do not intend to indicate any order of merit. The letters are chosen merely for the sake of convenience. Where two pupils are brothers, I add a number, as in the case of E1 and E2.

The tests consisted in the memorizing of discrete letters arranged in rows of four. The letters were placed in squares measuring four inches, somewhat as follows:

M	L	H	X
V	R	P	B
Y	C	W	N
D	F	P	L
J	S	L	G

M	V	R	B
L	Z	P	X
W	T	N	C
K	H	S	Y
J	B	L	Z
F	N	T	Y

These are samples of the twenty letter series, and twenty-four letter series respectively.

The letters were exposed for five minutes at first, and later in succeeding tests the time was shortened to three minutes. In the first eight series of tests five minutes of study was allowed, followed by five oral repetitions in chorus. In the succeeding tests, only three minutes' study was allowed without any oral repetitions. Before exposing the letters, I told the children that they were to remember as many of the letters as possible, in the order given. The cardboard with the letters upon it was then exposed. At the end of the given time the cardboard was covered, and the pupils told to write. No attempt was made by me to instruct the children how to study. Each pupil studied the letters in his own way. In correcting the results, I counted as an error any letter out of place, or not in the series. Only those letters were counted as correct which corresponded both in identity and in position to the letters exposed in the test.

The results are indicated in the following tables. Each table is headed by a title sufficiently descriptive to explain the conditions under which the tests were given. The abbreviations F, P, and H refer to the condition of the nostrils, whether free from all obstruction, plugged with a solid cotton plug (right nostril), or filled with a hollow cardboard (right nostril).

Of the pupils who were not noticeably affected by the obstruction it is to be noted that most of them obtained a result of twenty correct both when breathing was free, and when it was obstructed. This would seem to indicate that they were not extended by the tests. If the obstruction affected them to the extent to which the pupils were not extended they would still show no decrease in the results. A further effect to be considered is that of practice. Each succeeding test should be easier for the pupils up to the level of highest efficiency. In the second series of tests, therefore, I gave twenty-four letters instead of twenty; the other conditions remained the same. The effects of practice were compensated by the alternation of free breathing with obstructed breathing. The results were as given in the table on p. 237.

In the cases which showed the least effect of the obstruction, subjects C through O, there is a decided halt in practice effect, practically no progress being recorded. The last fourteen cases, G through h, show a decided drop in the results, the loss varying from 10 to over 20 per cent. In terms of actual classroom work, in lessons of drill, the pupil might as well be out of the room as far as any progress is concerned. In lessons of development, a 10 or 20 per cent loss is sufficient to result either in the necessity of repeating the lesson, or in the possibility of non-promotion of pupils affected by obstructed

SERIES 1.

Test: Memorizing of 20 letters arranged in rows of 4.
 Five minutes visual study, followed by 5 oral repetitions.
 Time: First test, April 11, 1910, at 2:43 p. m., no obstruction (F).
 Second test, April 12, 1910, 2:50 p. m., right nostril obstructed with cotton plug (P).

Pupil	Grade	No. Correct (F) Apr. 11	No. Correct (P) Apr. 12
A	7B	20	20
B	7A	20	20
C	7B	20	20
D	7B	20	20
E	8A	20	20
F	7B	20	20
G	7B	20	20
H	6A	20	20
E1	8A	15	20
J	7B	17	20
E2	5B	13	18
I	5B	16	16
K	5B	2	9
L	5B	5	11
M	8A	20	18
W	7B	20	18
N	6B	20	17
c	7B	20	17
R	7B	20	16
f	5B	20	16
U	5B	20	15
a	7B	20	14
H1	7B	20	14
O	7B	20	14
S	6A	20	14
P	7A	20	7
d	7A	20	4
b	7A	19	12
V	7A	18	14
Q	7B	18	10
g	6A	18	9
X	5B	18	4
T	5B	17	12
Y	5B	16	14
e	7A	15	11
Z	7B	6	5
Average of first 14 subjects		(F) 16.28	(P) 18.14
Average of last 22 subjects.		(F) 18.41	(P) 12.50
Total average 36 pupils		(F) 17.58	(P) 14.69

SERIES 2.

Test: Memorizing of 24 letters arranged in rows of 4. Five minutes study visually, followed by 5 oral repetitions, in chorus.

Time: Between 2:30 and 3 p. m., April 13, 14, 15, 18, 19, and 20, 1910.

Pupil	Grade	F	P	F ¹	P ¹	F ²	P ²
C	7B	24	24	24	24	24	24
D	7B	21	24	24	24	24	24
F	7B	24	24	24	24	24	22
M	8A	22	22	22	24	24	24
R	7B	12	18	24	24	24	24
H1	7B	10	17	18	16	24	24
E1	8A	14	14	20	23	24	24
O	7B	14	24	20	22	24	24
V	7A	8	—	16	24	24	24
W	7B	8	20	—	24	24	24
J	7B	16	19	20	23	—	22
K	5B	8	—	12	13	4	13
d	7A	5	12	—	6	4	6
A	7B	24	23	24	24	24	24
N	6B	18	16	24	24	24	24
P	7A	13	11	16	18	23	24
E	8A	19	18	23	21	19	22
Q	7B	14	9	6	17	17	21
Z	7B	4	2	4	6	18	23
e	7A	13	4	12	22	12	16
G	7B	23	22	24	24	24	23
B	7A	21	22	24	22	24	16
H	6A	24	23	24	22	24	17
S	6A	24	18	23	24	24	20
I	5B	24	14	16	22	23	16
b	7A	12	14	23	20	24	23
Y	5B	11	23	24	22	24	12
X	5B	10	8	22	23	24	19
T	5B	15	11	24	22	24	20
E2	5B	8	13	24	13	20	18
c	7B	9	21	18	17	24	17
L	5B	18	9	8	15	16	13
U	5B	3	5	24	5	18	12
h	6A	22	5	7	4	12	4

Averages	F	P	F ¹	P ¹	F ²	P ²
Average 8 pupils C-O...	17.62	17.62	22.	22.62	24.	24.
Average 7 pupils A-e...	15.	11.85	15.57	18.85	19.57	22.
Average 14 pupils G-h...	16.	14.85	20.35	18.21	21.82	16.43
Total average 29 pupils	16.20	14.89	19.65	19.58	21.86	19.86

breathing, especially in the case of pupils varying close to the median. Continued loss in this connection would inevitably drag the pupil to the group of the backward and the inefficient. It is significant to note in this connection, for purposes of comparison, that pupils who are absent 20 per cent of the term may be counted practically as non-promotions.

I now gave a series of five tests in which the conditions were somewhat changed. Only three minutes were allowed for visual study, without oral repetition in chorus, at the end of which time the pupils wrote what they remembered. In the fourth test, the subjects had a hollow obstruction inserted in the right nostril. As explained in the beginning, this obstruction consisted of a piece of cardboard, two inches long, half an inch wide, and bent at right angles. In the table, this is indicated by H. The five tests were made April 21, 25, May 3, 4, and 5. It is to be noted that the last three followed without a day between, while the first two had several days between. The results were as shown in the table on p. 000.

The hollow obstruction (H), did not have the effect that the solid plug did (P), as is shown by the number correct obtained by the fifteen subjects, H1 through E2. The solid plug continued to interfere with the results as in the previous tests, this standing out in the results obtained by the sixteen subjects, Q through L and G through E2. It is to be noted that those subjects who were absent in any test are not counted in the averages given. The solid plug interfered to the extent of from 10 to over 25 per cent in over half of the subjects, as in the previous tests. The interference, moreover, was due chiefly to the obstruction in the breathing of the subjects, and not to the irritation or distraction of the plug in the nostril. In fact, the irritation due to a hard bent cardboard is greater than that due to a soft cotton plug. In addition, the tests in which the solid plug (P) was used came at the end, giving the subjects the benefit of whatever practice effects there were.

Since the pupils obtained close to twenty correct out of twenty-four, I changed the matter to be memorized. The following series of letters and figures were given:

W	3	P	1
6	N	4	C
R	O	H	9
7	X	5	F
Z	2	G	8

21	M	35	F
48	H	56	L
N	13	R	27
K	28	Z	15
48	J	36	S
19	P	24	B

These are only samples of the tests. Different figures, letters and arrangements were used each time a test was given. As in the previous tests, the figures and letters were placed in squares measuring four inches, and were a little over two inches in height. The matter was exposed for three minutes, studied visually, covered, and the pupils then wrote what they remembered. As in the previous experiments, only those figures and letters were counted correct which were identical in position with those on the charts. In the results given in the following tables, F=free from obstruction, H=hollow plug, and P=solid plug, the plugs being inserted in the right nostrils of the subjects.

Series 4 proved easy for the pupils, as shown by the large number who got a total of twenty out of twenty correct. Any effects due to the plug in the right nostril would not be evident. Of the pupils affected by the plug, the average shows a loss of over 10 per cent with the solid plug (P), but practically no loss with the hollow obstruction (H). The hollow obstruction, if active at all, will act psychologically, as a distraction, and can be compensated by a high state of attention. Subjects keyed up and anxious to obtain as high an average as possible would not be greatly affected by the distraction which might result from a hollow plug. A solid plug, however, acts physiologically by interfering with the supply of oxygen breathed in. No degree of attention would be sufficient to compensate this loss, especially where the subjects are extended by the tests. Series 5 shows similar results. More difficult than series 4, the tests extended a greater number of pupils, and more were affected by the solid plug. The loss, too, was greater, being over 14 per cent. The hollow obstruction acted to a less degree, the loss being 10 per cent. In this case, we might consider that the 14 per cent loss due to the solid plug (P) equals 10 per cent distraction plus 4 per cent obstructed breathing. It is to be noted, however, that in every series of tests, the solid plug (P) resulted in a loss of from 10 per cent to 25 per cent, whether the hollow obstruction (H) affected the pupils or not.

With an entirely new set of pupils, I tried two series of tests with free breathing (F), with obstructed breathing (solid plug, P), and with interference with a hollow plug (H). The subjects were taken from grades 3A through 5A. A set of twenty-four letters arranged in rows of four was presented to the children who studied them visually for three minutes. The letters were then covered and the pupils allowed to write. The tests were given after 11 a. m. Two things are here to be noted: (1) the immaturity and inexperience of the subjects; and (2) the relative difficulty of the tests given. The results of the first three tests are as shown in series 6.

TABLE I.

Test Memorizing of 26 names arranged in rows of 4. These names were study advised		Time between 1.35 and 1.5 sec. April 22, 25 May 1, 4, and 5, 1931				
Group	Grade	F	P	H	M	P
P	7B	29	24	24	24	24
M	5A	22	24	23	24	24
R	7A	22	22	22	23	23
O	7B	16	21	22	22	22
C	7B	17	—	24	23	24
E	5A	24	—	21	22	21
X	6B	—	19	17	17	22
A	7B	—	—	23	17	24
D	7B	20	21	24	24	—
X	5B	15	20	19	22	—
Q	7B	18	16	22	23	23
T	5B	14	7	21	21	24
R	7B	21	20	22	20	22
H	6A	16	11	18	21	21
I	5B	21	13	16	16	18
L	5B	10	3	11	17	13
H1	7B	14	24	24	22	23
I	5B	9	19	20	12	15
S	6A	22	23	24	22	23
G	7B	22	20	24	22	22
b	7A	15	9	17	22	20
Z	7B	20	14	18	21	18
V	7A	23	19	18	21	19
K	5B	13	13	24	20	16
U	5B	21	13	17	22	15
W	7B	21	11	21	20	18
e	7A	21	10	15	24	16
h	6A	12	8	21	15	16
d	7A	6	4	6	11	3
E1	8A	21	—	20	21	18
E2	5B	21	—	22	19	18

Averages of complete cases.	No.	F	P	Averages of complete cases.	No.	F	H	P
F through X }	9	17.77	22.00	F through L...	14	20.43	20.71	21.78
H1 through S }								
Q through L }	16	17.12	11.94	H1 through E2	15	19.40	19.60	17.33
G through E2 }								
Total.....	25	17.36	15.56	Total.....	29	19.89	20.14	19.48

SERIES 4.

<p>Test: Memorizing 20 figures and letters arranged alternately in rows of 4. Three minutes visual study allowed.</p> <p>Time: Between 2:30 and 3 p. m., May 17, 18, and 19, 1910.</p>				
Pupil	Grade	F	H	P
A	7B	20	20	20
F	7B	20	20	20
X	5B	20	20	20
S	6A	20	20	20
H1	7B	20	20	20
I	5B	20	20	20
P	7A	20	20	20
B	7A	20	20	20
W	7B	19	20	20
E1	8A	19	20	20
E2	5B	18	20	20
b	7A	17	20	20
G	7B	20	19	20
E	8A	20	19	20
J	7B	20	19	20
R	7B	20	19	20
H	6A	20	19	20
Z	7B	19	19	20
K	5B	19	19	19
Y	5B	13	20	19
g	6A	8	13	9
d	7A	1	4	2
M	8A	20	20-	19
D	7B	20	20	19
O	7B	20	19	19
N	6B	20	20	18
U	5B	19	20	19
T	5B	19	20	13
V	7A	18	15	15
e	7A	15	12	10
Average	No.	F	H	P
A-d	22	17.86	18.66	18.18
M-e	8	18.87	18.25	16.50
Total...	30	18.13	18.53	18.03

TABLE I

Two Memorizing the figures and letters arranged above
below in rows of 4. Three minutes time
study allowed.

Time Between 2 P.M. and 3 P.M., May 26, June 1 and 2
1911

Pupil	Grade	F	H	P
F	7B	24	24	24
F	6A	24	24	24
K	5B	23	22	24
A	7B	17	22	24
D	7B	18	14	24
G	7B	24	20	24
O	7B	11	24	23
I	5B	17	24	23
M	6A	16	23	23
T	5B	16	16	22
H1	7B	13	22	20
Z	7B	15	14	19
b	6A	9	10	14
L	5B	12	12	13
b	7A	12	21	16
g	6A	1	10	13
d	7A	2	5	10
E1	8A	24	24	22
J	7B	24	24	21
X	5B	24	22	22
R	7B	24	22	23
B	7A	24	20	20
H	6A	23	20	20
P	7A	23	20	16
C	7B	22	16	19
E	8A	21	22	20
Q	7B	20	20	19
Y	5B	21	15	11
V	7A	12	12	10
Average.		No.	F	H
F-d	17	14.94	18.06	20.00
E1-V	12	21.83	19.75	18.58
Total...	29	17.79	18.62	19.41

SERIES 6.

Test: Memorizing 24 letters arranged in rows of 4. Three minutes visual study allowed. Time: After 11 a. m., May 31, June 1, and 2, 1910.				
Pupil	Grade	F	H	P
1	4B	15	11	15
2	4A	11	7	16
3	4A	4	9	15
4	4B	10	7	14
5	4B	8	9	13
6	5A	1	11	16
7	5A	4	12	14
8	5A	6	3	14
9	5A	5	9	11
10	5A	5	10	10
11	5A	5	6	7
12	4A	5	5	7
13	4A	4	8	8
14	3A	2	4	4
15	4B	21	22	6
16	4B	15	10	6
17	4B	11	4	9
18	4A	13	1	10
19	4B	9	7	2
20	4B	9	8	6
21	4A	10	10	8
22	3A	13	10	6
23	4A	7	1	4
24	4A	6	4	1
25	4A	7	0	0
Average				
1-14	14	6.01	7.93	11.71
15-25	11	11.00	7.00	5.27
Total...		8.24	7.52	8.88

With this new set of subjects the plug interfered to the extent of over 40 per cent in eleven out of the twenty-five cases. The hollow obstruction resulted in a loss of over 35 per cent in the number correct. Since the work was new to the pupils, a decided practice effect should have been observed, had there been no hollow obstruction. The interference in the results due to the hollow obstruction was practically as great as that due to the solid plug. It would

seem that the immaturity of the pupils rendered them more susceptible to the distraction of the hollow plug, and less able to concentrate their attention as did the older boys. In the following series, therefore, I gave last the tests in which the hollow plug was inserted in the right nostril, and second the tests in which the solid plug was used. As the following results show, the hollow obstruction still affected the pupils to about the same relative degree:

SERIES 7.

Test: Memorizing 24 figures and letters, arranged alternately in rows of 4. Three minutes visual study allowed.				
Time: After 11 a. m., June 7, 8, and 9, 1910.				
Pupil	Grade	F	P	H
26	5A	5	7	16
8	5A	12	12	13
15	4B	9	16	13
27	5A	7	11	10
17	4B	6	12	8
16	4B	6	7	6
10	5A	4	9	7
28	4A	5	3	8
14	3A	1	0	3
21	4A	4	7	5
19	4B	4	4	5
<hr/>				
1	4B	14	6	11
6	5A	12	13	8
2	4A	9	9	7
11	5A	11	7	7
3	4A	8	10	7
5	4B	8	7	6
7	5A	12	12	6
13	4A	9	8	3
9	5A	5	5	3
29	3A	4	4	3
18	4A	8	1	6
25	4A	3	8	2
23	4A	8	1	2
<hr/>				
Average	No.	F	P	H
26-19	11	5.72	8.	8.54
1-23	13	8.54	7.	5.46
Total...	24	7.25	7.87	6.87

COMPLETE TOTALS FOR SERIES 1 THROUGH 5.

Pupil	Grade	No. of Tests	Free	Plug
F	7B	16	180	182
M	8A	16	169	178
A	7B	14	152	159
O	7B	16	147	169
D	7B	14	147	156
R	7B	16	167	167
H1	7B	16	143	158
E1	8A	14	136	141
Q	7B	14	115	115
K	5B	14	97	107
J	7B	10	97	103
Z	7B	16	104	107
e	7B	8	71	72
f	5B	6	49	50
g	6A	6	27	31
<hr/>				
G	7B	16	181	175
S	6A	16	181	166
H	6A	16	169	154
I	5B	16	153	142
P	7A	16	159	141
T	5B	16	151	130
E	8A	14	143	142
b	7A	16	139	134
C	7B	12	138	135
X	5B	14	133	116
V	7A	14	129	125
B	7A	12	133	120
N	6B	12	123	121
U	5B	14	122	84
W	7B	12	113	111
Y	5B	12	109	101
E2	5B	12	105	100
L	5B	14	80	77
h	6A	12	83	51
e	7A	8	66	47
d	7A	14	44	41
a	7B	2	20	14
<hr/>				
Total F-g, 15 subjects.....			1801	1895
Total G-a, 22 subjects.....			2674	2427
<hr/>				
Grand total, 37 subjects.....			4475	4322

In the seventh series of tests, the hollow obstruction, which would receive whatever practice effects there were, resulted in a loss of over 35 per cent in thirteen out of the twenty-four cases. The solid plug, used in the second set of tests, resulted in a loss of over 15 per cent in the total number correct. It seems safe to assume from these two series of tests, series 6 and 7, that with younger children, and where the attention is weak, the loss due to distraction is as great or greater than the loss due to interference with the supply of fresh air when the nostril is clogged up. This loss will vary between 15 per cent and 35 per cent. When the subject matter is relatively difficult, the loss may be as high as 40 or 50 per cent. In any case, the loss due to obstructed breathing will run from 10 to 20 per cent.

To see the total effect of the solid plug on the results obtained in all the tests in series 1 through series 5, I have arranged the totals in the table on page 245, which gives (1) the number of tests in which the pupils participated, (2) the number correct obtained when the breathing was free, and (3) the number correct obtained when the breathing was obstructed by a solid plug.

The total of all the cases in the preceding table shows that of the 22 subjects affected, the loss is almost 10 per cent. Moreover, if we assume that the practice effect was also hindered, this loss is in reality between 20 per cent and 30 per cent. In summary, it seems fair to assume the following conclusions:

- (1) In all cases of obstructed breathing from whatever source, there will be a loss in the results of memorising verbal matter of from 10 to 30 per cent;
- (2) There will be no practice effects;
- (3) Where the work is new and difficult, the loss will run as high as 50 per cent;
- (4) With more mature pupils, in fifth through eighth school years, the loss is due to physiological causes;
- (5) With less mature pupils, in third and fourth school years, the loss is due as much to distraction as to interference with breathing;
- (6) In terms of classroom practice, obstructed breathing prevents any progress through drill, and hinders assimilation of new matter sufficiently to cause non-promotion of the pupil concerned.

The above conclusions seem conservative in view of the simplicity of many of the tests given. It is to be remembered that a great deal of the school work requires additional mental effort in the way of organization and thought. The importance of cleanliness, removal of adenoids, etc., need not be dwelt upon.

NEWS AND COMMENT.

Extension Work in Education by the University of Pennsylvania.

Since adding to its staff, the School of Education has endeavored to extend its work to as many different parts of the state as possible. This desire to serve the interests of the commonwealth characterizes the relations of the University of Pennsylvania with the state. The School of Education has recently given courses leading to University credit in Harrisburg, Williamsport, Wilkes-Barre, and West Chester. Training and conferences in school administration have also been offered free at Altoona to superintendents of the vicinity, and this service is being extended to a number of centers throughout the state.

The University is now able to increase these opportunities for the teachers of Pennsylvania and New Jersey. Besides the courses already offered at the University at hours convenient for city teachers, the School of Education will during the second term of this year (February to June, 1915), offer without charge (I) *Three courses in education for University credit*; (II) *A course of lectures on present day aspects of education by speakers of national repute*, and (III) *Two conferences upon the training of teachers for Pennsylvania*.

I. The three courses that lead upon satisfactory completion to University credit, will be given in co-operation with the Philadelphia Teachers' Association, but all teachers and others interested in Education will be welcome to these classes. All meetings will be held in the lecture hall of the Philadelphia Girls' Normal School, Thirteenth and Spring Garden Streets. A membership fee of five dollars will be required for each course, to provide reference books in sufficient numbers, and these books will become the property of the Philadelphia Teachers' Association. The University makes no charge whatever.

(a) *The Elementary School Subjects in the light of recent Studies in Education and Psychology.* Conducted by Edward Lee Thorndike, Ph.D., Professor of Educational Psychology, Teachers College, Columbia University. Thursdays, 4 to 6 p. m.

(b) *Curriculum and Methods of the Secondary School.* The lecturer has not yet been selected, but will be announced shortly. This course will be given Tuesdays, 4 to 6 p. m.

(c) *Problems of Education in Pennsylvania.* It is hoped that this course will be conducted by George E. Becht, Sc.D., Secretary of the State Board of Education, on Mondays, 4 to 6 p. m. Should Dr. Becht's engagements not permit of his coming, the course may be given up.

II. Present Day Aspects of Education. The lectures will be given Fridays at 4 p. m., in Houston Hall, University of Pennsylvania.

(a) February 19th—Elmer Ellsworth Brown, Ph.D., LL.D., Chancellor of New York University.

(b) March 5th—Nathan C. Schaeffer, Ph.D., LL.D., State Superintendent of Public Instruction, Pennsylvania. Subject: "More Money for the Public Schools."

(c) March 19th—Philander P. Claxton, Ph.D., LL.D., United States Commissioner of Education. Subject: "Some Democratic Tendencies in Education."

(d) April 16th—Calvin N. Kendall, LL.D., State Commissioner of Education, New Jersey.

(e) April 23d—Nicholas Murray Butler, Ph.D., Litt.D., LL.D., President of Columbia University.

(f) April 30th—David Snedden, Ph.D., LL.D., State Commissioner of Education, Massachusetts. Subject: "Liberal and Vocational Education."

(g) May 14th—Albert E. Winship, LL.D., Editor of the *Journal of Education*. Subject: "The New Attitude Toward Education as a Profession."

III. Conferences upon the Training of Teachers for Pennsylvania.

(a) April 3d, 9 a. m. to 12 m., and 1 to 3 p. m., in Houston Hall, University of Pennsylvania. The general topic will be the Training of Teachers for Rural Schools. State Superintendent Nathan C. Schaeffer will preside and papers will be presented by the following principals of Pennsylvania state normal schools:

1. Frank E. Baker, Ph.D., Edinboro, Pa.
2. Walter E. Hertzog, Ph.D., California, Pa.
3. William R. Straughn, Ph.D., Mansfield, Pa.
4. P. M. Harbold, Ph.D., Millersville, Pa.
5. Ezra Lehman, Ph.D., Shippensburg, Pa.

(b) April 10th (Schoolmen's Week), 9 a. m. to 12 m. and 1 to 4 p. m., in Houston Hall, University of Pennsylvania. State Superintendent Nathan C. Schaeffer will preside and papers will be presented by the following principals of state normal schools:

1. George M. Philips, Ph.D., LL.D., West Chester, Pa.
2. James E. Ament, LL.D., Indiana, Pa.
3. James M. Green, Ph.D., LL.D., Trenton, N. J.
4. E. L. Kemp, Sc.D., East Stroudsburg, Pa.
5. Charles Lose, LL.D., Lock Haven, Pa.
6. A. C. Rothermel, Pd.D., Litt.D., Kutztown, Pa.

The University of Pennsylvania also takes this opportunity of announcing its annual Schoolmen's Week, which will probably be April 5 to 10, 1915.

For further information concerning the extension lectures or Schoolmen's Week, address Prof. Frank P. Graves, Dean of the School of Education, College Hall, University of Pennsylvania, West Philadelphia, Pa.

The Psychological Clinic

Copyright, 1915, by Lightner Witmer, Editor.

VOL. VIII, No. 9.

FEBRUARY 15, 1915

EFFECT OF ADOLESCENT INSTABILITY ON CONDUCT.

BY AUGUSTA F. BRONNER, PH.D.

Juvenile Psychopathic Institute, Chicago, Ill.

That the period of adolescence brings with it numerous problems is a fact well known to all who come in contact with young people of that age. An understanding of these problems, however, is frequently lacking on the part of parents, teachers, social workers, and those connected with juvenile courts, important though this may be for the welfare of the adolescent. The changes, physical, mental, and moral, which take place at this time and which have been described in detail by such writers as Hall, Clouston, and Marro are too little known and appreciated by many of those who desire most earnestly to deal sympathetically and understandingly with young people. It is sufficient to be familiar, in a general way, with the characteristics of the adolescent period; it is more important to know that certain specific changes take place, and even far more important to realize how these changes affect behavior.

The whole problem is a very large one; we desire to discuss briefly only one phase of adolescent conduct—general instability—and to cite several cases where this has been the fundamental cause of delinquency. Nor are the instances cited at all unusual; they might be multiplied indefinitely, and while they represent cases brought into the juvenile court, they serve but to picture behavior no more extreme and unlawful than that of many who, because of more fortunate circumstances of one kind or another, escape such punishment.

Most of the writers on the subject of adolescence have included among its characteristics changeableness and instability. Stanley Hall has especially emphasized this as being a correlate of the development of new phases of the affective life. He has shown how greatly the adolescent varies in his behavior; he is once extremely secretive, then most desirous of confession; religious and sacriligious in turn; going from one extreme to another—a creature utterly unstable, changing from day to day, and from mood to mood. This is not

surprising; for with new desires and organic cravings there arise new and strong emotions not yet supplied with adequate channels of expression, which nevertheless react in behavior.

Other forces begin now to operate as well. According to some writers it is at this period that strong hereditary tendencies often exhibit themselves. Thus Clouston believes that those who are subject to great mental and moral changes at adolescence have usually hereditary tendencies making for nervousness. "They come of families or stocks in which drunkenness, eccentricity, genius or insanity have appeared," he writes in "The Hygiene of the Mind." We know that the storm and stress of the adolescent period varies with different individuals. Some pass through it with comparatively slight mental and moral disturbances, while in the case of others the period brings with it the most intense struggles. In some instances the boy or girl develops into young manhood or young womanhood slowly and evenly, but with others there are marked changes of character accompanied by extreme phenomena in the mental and moral realm. No doubt the hereditary background is one element, at least, that accounts for this difference in the forces of adolescent impulses. In every case these great changes, these strong forces not yet adequately understood and controlled, account for the instability so characteristic of the young adolescent.

If this is true, if vital changes occur and new forces come into play, if self-control is weakened and instability increased, then one would expect to find a close relationship between these phenomena and delinquency in adolescent offenders.

It is true that in almost no cases of delinquency is there one cause that can be cited as the one and only factor which determines the behavior of the individual and which therefore is alone responsible for his offense. There are rather a number of interrelated factors which together explain the reprehensible conduct. Some one of these may be the main cause to which the others are subsidiary, but behavior is ordinarily a most complex affair and many elements combine to make it what it is. Yet with adolescent offenders there are instances where adolescence alone, or largely, accounts for the delinquency. Whereas the instability, so characteristic of the period, may play a part in the cases of all adolescent offenders, yet often the rôle is less important than that of other forces. The delinquency may have begun long before the adolescent period. There are many other factors, such as bad home conditions, bad companions, disturbing influences of one kind and another that have influenced the child.

On the other hand, it may occur that the boy or girl becomes definitely delinquent for the first time at just the age of adolescence.

Up to then he has shown no signs of waywardness; he has appeared a normal child, not difficult to control and exhibiting no unusual tendencies. Perhaps his previous record has been unusually good, his school reports have been satisfactory, he has been considered trustworthy and reliable. Suddenly his behavior changes, it becomes contrary to the tenor of his earlier life; he becomes unstable, unreliable, performing acts that are unusual, at least for him, foolish and erratic. Sometimes this erraticism is so extreme as to verge on an actual psychosis. All this occurs without any marked change in the external conditions under which he lives; though environmental circumstances remain the same, the individual alters noticeably.

The specific deeds actually performed vary from one person to another as does the length of time that they persist. Often the outburst of irregular and unusual action is brief; a few weeks or months during which one cannot anticipate what will occur, after which the boy or girl displays no further tendency to peculiarity or delinquency. In other instances a longer period elapses before the individual reverts to his former stability. But when the unusual conduct is an adolescent phenomenon it terminates during that period unless other new elements enter, which prolong and alter it. Ordinarily, however, with the passing of adolescence greater stability is acquired, self-control develops, social adjustments are made, the individual finds himself.

Often there are other factors which complicate the problem. There may be premature physical development, early puberty, mental and nervous disorders of one kind or another which increase the burden that is thrown on the shoulders of the young adolescent. Such cases require special understanding and sympathy, and deserve a fuller and more detailed discussion, such as is found in Dr. Healy's new book, "The Individual Delinquent."

A knowledge of the characteristics of the adolescent period and an appreciation of their importance is a necessary part of the equipment of those who wish to work with young girls and boys intelligently and helpfully. A recognition of the characteristic instability of the period and of the expression of this instability in behavior, as well as of its often temporary character, are very important in dealing with delinquents both in and out of courts. The understanding of the problem becomes a very vital issue in the prognosis of all such cases and has a very practical bearing on the attitude toward and the treatment of the offender. Delinquent acts committed at this period cannot be judged in and of themselves. If adolescence as a factor is not taken into account, the judgment made is most likely to be erroneous. This does not mean that nothing definite should be done, that one

must wait helplessly until adolescence has passed. On the contrary, constructive measures of all kinds are never more urgently necessary than at just the adolescent period.

Yet one must interpret these as adolescent reactions, and neither minimize nor magnify their importance, and one must be conscious of all that is implied of the need for sympathetic guidance and control until the delinquent shall have attained that stage of development where he is able to control himself. In order to illustrate these points, certain cases studied in the Psychopathic Institute of the Juvenile Court of Chicago are presented. All are cases of adolescent offenders and though certain factors vary from case to case, yet in all, instability is marked. A summary of the physical and psychological findings is given, together with details regarding the delinquencies and outcome of each case.

Case I.—The first case cited is one where adolescence is certainly the main, and perhaps the only, cause of the delinquency; it is presented as illustrating an instance where the heredity, according to reliable information, is entirely negative.

This boy, L. S., was fourteen years and nine months old when first seen. He was a short but sturdy lad, strong and in good physical condition. No sensory defects were found, and no signs of nervous disorder other than a slight tremor of outstretched hands and biting of finger nails. Pubertal development was possibly somewhat, but certainly not greatly, premature. He was pleasant in manner and responsive in attitude.

Mentally he was quite capable. He had completed the seventh grade of the public schools before reaching his fourteenth year. On tests he proved to have good ability and good mental and psychomotor control. He showed no signs of irregularity or peculiarity. His best records were achieved on tests requiring powers of analysis and control; his poorest on those requiring skill in construction work, but in no instance were the results poor. For a lad of his ability he was rather poorly informed, particularly in regard to scientific matters. He knew some little of historical events in spite of having few books at home and not taking books from any library. His school record was good; he had been truant on very few occasions—only once or twice in all his school years.

The parents, both of whom were greatly interested in the boy's welfare, gave a very good account of family and developmental conditions, as well as a detailed story of the boy's difficulties. These facts were corroborated by L's own frank recital of his problems as he saw them.

Up to the time when he left school he had been in no way delin-

quent. There was no complaint at home or at school. Shortly afterward, that is, just at the period of early adolescence, he began running away from home, associating with bad companions, giving up his positions voluntarily—for he was never discharged up to the time when he was first brought to the Juvenile Court. The occasion that led to his first running away was of such minor importance that he himself did not recall it a short time later. The next escapade of the sort was prolonged for over two weeks. During the day when both parents were away working the boy would go home, obtain something to eat, sleep, and leave the house before their return, only to spend the nights riding on elevated railroads. As he himself expressed it, "I was flipping. Walked the tracks and jumped on the cars at the station. Every night I did that." This running away was preceded by some very slight family trouble. He felt that he "was getting blamed for everything his brother and sister did." Besides this his mother wished him to help her in the home. "I did not want to do housework and I got kind of sore and said, 'Wait.' After awhile she said, 'Are you going to do it?' and I got sore and said, 'I'm going out,' and I went away and did not come back." Nevertheless when the boy was at home during the day while the family were away, he did not only his share of the work but that usually done by his brother and sister as well.

Previous to this the boy had retained one position for three months. Then he left this employer because "the boys blamed everything on me." His next position he voluntarily relinquished at the end of a month because he was tired of it. At that time he began associating with bad companions, boys who had lived in the neighborhood previously, but with whom he had never made friends up to that time. With them he began smoking, but he would never accompany them on the stealing expeditions in which they took part.

After his appearance in court he was put on probation, went back to work, continued steadily for two weeks and then on his pay day went away and stayed over night. Two weeks later he ran away once more and after an absence of a week he was apprehended and again brought into court. He had given up his position, had had several others, each for a short time. At the last place of employment a half hour after beginning work he had stolen a ten-dollar bill and run away. His last leaving home, he said, was due to fear. He claimed that, having bought tobacco with the money his father gave him for lunch each day, he had run up a bill against his father in consequence of which he was ashamed, as well as afraid, to go home. In his last adventure he said he had not run away with his former companions, but had gone alone.

At this court appearance he was sent to a correctional institution for three months. He had a good record there and on his release was given a position by his first employer. From that time on the boy has done well and there has been no further complaint. He has never been again in court, he has worked steadily and now has been released from probation, his good record having been maintained for more than two years.

Before one can understand the causative factors in this boy's delinquency it is necessary to inquire into other features of the case. Heredity is entirely negative. There is no history of any nervous or mental disease in either family. The parents are good, industrious people, both working in order to pay for the home which they had bought. While it is true that the mother was away all day, yet this lack of home control was equally present long before the boy became delinquent. In fact one would expect this to be more harmful while the boy was going to school and had his afternoons uncontrolled than when he was working. Up to the period of his delinquency he had not associated with bad companions, who later influenced him considerably, but since these boys had lived in the neighborhood previously he might have become friendly with them earlier had he wished to do so. It was not idleness or lack of occupation that was a factor for, as we see, he obtained good positions from which he was not discharged.

When one considers the boy's native ability, his training both at home and at school, which was at least average and fairly good, the fact that environmental conditions were fairly satisfactory and unchanged at the time, one is led to the conclusion that the largest force in the delinquency of this boy was adolescent instability. From a steady reliable lad, who had a good reputation both at home and at school, a boy liked by all who knew him, he became unstable, unreliable, changeable in his behavior. Just why he should suddenly begin leaving a good home and relinquishing positions on the flimsiest of excuses, involving himself later in theft, cannot be explained by any external circumstances. But as these reactions began without any warning, just so after a few months they were discontinued. The boy was delinquent for only a short time during the adolescent period and there is little doubt that he will now continue successfully to adjust himself to his social situation and fulfill such obligations as are necessary for him to meet.

Case II.—This case resembles the preceding one, inasmuch as adolescent instability is the main causative factor. Unlike Case I, however, there is a long period elapsing before the individual regains the former stability. Though the delinquencies were never excessive,

they occasioned much worry and concern to all interested in the girl. They were so similar in character that, though extending over a period of more than four years, the case can be briefly summarized and the essential features presented in a few words. The brevity should not obscure the fact, however, that in behalf of the girl many constructive measures were undertaken which no doubt were factors in the successful outcome.

M. W., sixteen years and four months old when first seen, was large for her age, and well developed, but pubertal onset was not premature. A number of physical findings pointed to a mild hysterical condition. The palatal-pharyngeal reflex was absent, corneal reflex minus, conjunctival absent. Arm and knee jerks were normal. She complained of frequent frontal headaches, which might have been due to the fact that, according to her statement, she sometimes read the night through. She complained, too, that she became dizzy occasionally when going up or down stairs, and that at times she would laugh or cry without being able to control herself.

She was extremely bright; not only was she advanced in school work, but she had read widely as well. She was a fluent talker, a student and very ambitious. Even here, however, she showed great instability for almost daily there was some new vocation that she wished to pursue; only of one thing was she sure, and that was that she "wanted to be great".

There were no complaints regarding M. until she was sixteen years old, when in the course of one year she had run away from home eight times. She refused to tell her family just where she remained when away, but it was definitely known that she had never been immoral. The home was not a poor one, indeed in many ways it was quite good. M. had numerous disagreements with other members of the family who really did not understand the girl and had little sympathy with her ambitions. Feeling that her own home, in spite of the material comforts, was uncongenial, the officer who had the girl on probation placed her elsewhere, both in girls' clubs and in private homes. Though great care was taken to find suitable occupation for her, yet she was never satisfied long at any one place. Once she was discharged for failure to attend properly to her duties; always anxious to be a success, she had not the stability to achieve it in any situation where placed. She was not guilty of any grave misdemeanor, but she occasioned an immense amount of trouble by her general instability and her changeableness. Tried in numerous places, she was never satisfied; she ran away again and again, living at times with strangers, winning the sympathy and confidence of those in charge of various philanthropic enterprises only to disappoint

them soon by her inability to "make good". This continued for several years, M. trying at various times to adjust herself to her own family conditions, but always failing to do so. In the meantime she assumed the name of a lost heiress, not on her own initiative, for it was from others, who really believed it to be true, that the suggestion came. Doubtless M. enjoyed the notoriety for a time and hence made no effort to disprove the assertion.

Then she left the city entirely, supported herself elsewhere, but wrote letters to her friends expressing her general dissatisfaction with conditions as she found them. Several months later she returned to her family, but soon left home again and was not heard from until she sent word that she had given up the religion of her people and had been converted to a different faith. During this time her only delinquent act, other than changing about from place to place, and dissatisfaction with any regular employment, was the purchasing of some articles which she charged in the name of some people whom she knew. This led to her retaining a position in an office for four months until this debt was discharged.

Suddenly, after four years of behavior characterized chiefly by instability and unreliability, M. made a resolution to attempt seriously to achieve something. She entered a college where she maintained herself by her own efforts, earning her way entirely by her own work. During the year it became known that she had previously been a ward of the court and through some untrue accounts sent by her family, still outraged by her religious conversion, her delinquencies were grossly magnified and distorted. As a result, M. was practically ostracized by her former friends, but through it all she exhibited the greatest strength of character, refusing to leave the college, determined to gain the education she desired. She completed the year's work with a good scholastic record which, at least, could not be denied her.

She has now entered a hospital where she is being trained for a professional nurse and thus far her record is extremely good. She feels that she has, at last, entered upon a career that satisfies her and she has found herself. Indeed, she bids fair to achieve her old ideal of "greatness" for after a long period of vacillation she has now shown evidence of having achieved much in the realm of conquering herself. She is today a very attractive young woman, serious, ambitious, self-reliant and dependable. All physical signs of hysteria have disappeared, and doubtless the long period of instability has passed.

Case III.—The next case will be reported briefly. It is cited, however, as illustrating a marked difference from Cases I and II. There the heredity was entirely negative. In Case II there are, on

the contrary, several interesting features as regards heredity, but there are few, if any, other contributing causes other than defective heredity and adolescent instability.

This girl, J. T., was sixteen years and eleven months old when the case was first studied. She was strong and in good general physical condition. She was large for her age, being 5 ft. 5 in. in height and weighing 146 lbs. Onset of puberty was not premature. No sensory defects were found.

Mentally the girl was normal in ability, rather bright. She had been graduated from the grammar school, had read much and was well informed. The results on all tests given were good.

The data relating to the case were obtained from the girl and her father, and the main points were corroborated by an aunt and a friend of the family. The girl had given no trouble earlier; there had never been any complaints from school, the only fault her family had found was a tendency to tell falsehoods, but these were only to shield herself from scoldings when she had been guilty of any small act of disobedience. They were never significant and she had been considered a good girl.

After leaving school, J. obtained a position which she retained for several months. Then after having a perfectly clear record, she stole a sum of money, her employer claiming it was \$100, although the girl affirmed it was only \$35. Part of this—\$22—she gave to her mother as a gift, telling her she had made it as "extras", although there was no need for additional money at home. The remainder of it she spent foolishly, buying, for instance, a bird and cage which she took home. At the same time, she had also taken a ring from an employee who had left it on her desk. When brought to court she was ordered to return the ring, secure another position and to pay \$1 a week to her former employers to discharge the debt she owed them. Her mother returned the \$22 when she learned the true circumstances. Before she had met this obligation, she gave up the second position because, as she said, "The work was dirty. I got ink and excelsior all over my clothes." She had asked to be transferred to another department and when refused she left. The following two weeks she spent in looking for work, but during this period she lied to her family, telling them she was engaged in house-work. Not having any pay to take home at the end of the two weeks she ran away. This was a particularly cruel thing to do inasmuch as her mother was very ill at that time. The desire to spare her mother worry was the justification J. herself gave for lying in regard to work. She did not wish her mother to worry because she had no work, but the worry because of her absence seems not to have occurred to her.

After two appearances in court within a few months, it was seen the girl was most unstable and she was sent to an excellent school where she remained for some time. From that time on she was not delinquent. After she left school she returned home and the later reports, covering a period of three years, have been uniformly good.

Turning now to the heredity in this case we find several important facts. The father during his adolescent period was in an asylum for six months. He states that when about sixteen he "got to worrying terribly about some things and was under lock and key, but always knew everything, and has been all right ever since." This has been corroborated. There was no recurrence of any mental trouble, and he has steadily borne a good reputation. His only eccentricity has been shown in his extreme religious fervor which amounts almost to fanaticism.

On the mother's side there were also neurotic conditions. J's father and aunt both stated that the mother had had chorea in her sixteenth year, had always been nervous, and at the time of J's trouble she was very ill of tuberculosis. The maternal grandmother and a maternal aunt also had had tuberculosis.

Because of the father's peculiarities and the mother's invalidism the home conditions were somewhat unusual. The father's religious inclinations led to much repression of the girl. She was forbidden to indulge in the amusements which she craved; the father wished her to read nothing but the Bible, and, although she associated only with good companions, her father objected to her friends because they attended theaters and dances. In other ways, however, the home influences were good. The parents were honest and industrious. The ideals presented to the children were comparatively high. There had been no trouble with two other children, both younger than J. The girl had associated with no bad companions and had gone with no one who stole. The mother's illness may have led to some lack of oversight and control on her part. The father attributed some measure of the blame to an aunt who was, he said, a frivolous woman and had influenced the girl. The aunt certainly, however, was not connected with J's stealing or running away.

There had been no evidence of any tendency to steal before this time and the very peculiarities of the home would tend to discourage any actions of the sort. The expenditure of the money for unnecessary, almost useless things showed that there was no urgent need impelling the girl, nor any longing to gratify unfulfilled desires. While the home provided no great recreational opportunities, there was no great poverty or distress. The lying in regard to work might be considered as a continuation of J's early shown tendency to

defense by prevarication, but it had never been as extreme in character, or continued for so long a time.

The fact that this type of conduct has never been repeated, that it began suddenly without sufficient reason in the external circumstances to warrant it, shows it to have been largely an adolescent outburst. Within the period of five months J. became much more stable and ceased being delinquent.

Case IV.—We have here an instance where, as in the previous case, heredity is a feature, but in Case IV this is very much more marked. Indeed, it is cited as an illustration of heredity that is extreme in its defectiveness.

This boy, H. M., was fifteen years and five months old when first seen; he was found to be in exceedingly good physical condition. He was well developed and well nourished. Sex development was quite advanced for his age. His voice was deep and features of mature type. He made no complaints regarding his health and no sensory defects were found.

Mentally he was well up to the ordinary in ability and information. He had no particular aptitudes and no unusual endowments. On the other hand, the results of tests showed no irregularities and no peculiarities. He had had a good record at school which he always liked. He had attended a technical school for six months, had a good record there; he was considered a fine worker. He had left this because of his father's death.

On several occasions he ran away from school, but he could never have been termed a truant. Both he and his intelligent mother stated that he had never stolen until one year previous to our study of him when he had obtained, at various times, money from the family grocer, charging the same to his mother. From that time on he became more and more delinquent until it became necessary to bring him into court. Within a period of two weeks he had stolen money and jewelry from roomers in his mother's house. On the occasion of a visit at the home of a school friend he had stolen ten dollars in money from his friend's mother. He had been staying out until midnight and lying much, but largely to cover up his delinquencies. He had become utterly unreliable. Sent on an urgent errand he went to a picture show from which he did not return for hours. The mother, a strong and sturdy character, felt she could no longer control him. The boy's attempted justification for his behavior was that he wanted more spending money.

After his case had been brought to court he was put on probation. A position was obtained for him. He worked for three weeks. He then appropriated \$17 which he had collected for his employer.

In spite of this it was felt the boy was not innately vicious or criminalistic, and after a rather severe reprimand, he was once more placed on probation. In the three and a half years that have elapsed since this boy was last in court, he has not stolen again, he is no longer guilty of lying and it has never been necessary to bring him into court again. The only complaint regarding him is that after working for some months, earning at times as much as \$3 a day, he will be idle for a short period. Then when he has spent all his money he will be dependent on his mother and older brothers until he obtains work once more. Both he and the mother state that he does not drink and that he has never repeated his earlier offenses. The delinquency lasted for just about one year.

The heredity in this case is very remarkable. There is a history of alcoholism, criminality, insanity, and feeble-mindedness in the family. The father was an alcoholic both before and after this boy's birth, but he was the only member of the family of whom this was true. The mother is a very good woman, a strong character, sturdy and honest, intelligent and rational about her children, and very anxious to do everything possible for their welfare. The maternal grandmother had been a very good woman, but the maternal grandfather was a man of violent temper and extremely alcoholic. He had two brothers, one insane, and the other excessively alcoholic. Of the mother's siblings two died in infancy, one was insane, two were feeble-minded, one was criminalistic and a suicide, and two were normal in every way, but a son of one of these was likewise alcoholic. H's mother had had ten children, five of whom had died in infancy or when very young. Of the five living there had been no trouble with any except H. All were older than he and all had become good men and good women, non-alcoholic, industrious and honest.

The home conditions were anything but ideal, for the father had continued drinking up to the time of his death, two years before H. was brought into court. But this very fact, coupled with the mother's teaching, had acted as a direct warning and deterrent to the children. The mother, to contribute to the support of the family, had been compelled to work away from home, thus being unable to exert much control over the boy when he was badly in need of it, but, as in Case I, this was equally true earlier, and had been the condition under which all the children had been reared.

There had been no difficulty in regard to the boy's behavior before adolescence; he had not associated with bad companions or shown any tendency toward stealing prior to that time. What part heredity played, other than in its tendency to increase instability, is doubtful; certainly it did not affect the boy's mental ability,

for as we see, he was quite normal mentally. Indeed, apart from adolescence, it is difficult to assign a cause for his behavior, or to understand why, after a year, the stealing and lying should cease altogether. He is now proving quite capable industrially and able to take care of himself.

Case V.—Here we have an instance of adolescent instability, with bad hereditary background and added factors. The case serves, however, to illustrate that in spite of there being more complex conditions than in any of the previous cases, other factors may be minor as compared with adolescent instability, which undoubtedly in some complex cases still is the major cause. The delinquency in this case begins and terminates with the adolescent period though many of the other conditions remain identical after the delinquency has ceased. We have here again a picture of adolescent struggle quite prolonged before self-control is acquired.

E. D. was a girl fifteen years of age. Physically her general condition was quite good. When first seen her attitude was so slouchy there was thought to be a possible tendency to scoliosis. However, a specialist to whom she was sent reported this as due more to mental attitude than to any physical abnormality. This proved to be the case for, after attending a gymnasium for some time, she improved greatly and became an exceedingly attractive girl. She was overdeveloped in physical sex characteristics and there was rather early onset of puberty. There were no sensory defects and all other features of physical examination were negative.

The results of repeated psychological examination were of great interest in this case, for opinions regarding the girl's ability varied greatly. By one person she was said to be lacking in ambition and in powers of concentration, to have a poor memory, and to be difficult to teach. However, another said that when compelled to do so, she was able to accomplish tasks successfully, and that she had a good memory for whatever aroused her interest. A teacher in the school which she attended stated it as her opinion that the girl had talent and would make a good kindergarten teacher.

On the basis of repeated study the conclusion was reached that E. was really rather incapable; she had a very good memory, but in independent thinking she was not at all successful. When a situation became at all complex and required powers of mental control and analysis she failed. She was unable to reconstruct knowledge once gained and apply it in similar, but slightly varying situations. She was unable to cope with a situation that required reasoning powers. Taken all in all, one was forced to the conclusion that the girl had innately poor ability, but because of good memory

powers, especially regarding things taught her, she might easily be considered much brighter than testing proved her to be.

Although E. was never in any grave difficulty, yet she was in court a great many times because of various troubles. The first complaints made were that E. was remaining out late at night and was associating with bad companions. Previously she could not have been the source of much trouble, for the parents were the kind who could exert little control or patience and they would probably have reported her earlier had she been very troublesome. She was put on probation and placed in a good home where she showed some improvement. After remaining there a month she wished to return home, claiming that she had learned a lesson and would behave. She was allowed to do so; at the same time efforts were being made to aid the girl; she was sent for treatment to an excellent gymnasium which improved her physically very much. At home, however, there were quarrels with her parents, charges that she would not work, and that she persisted in being friendly with an undesirable young man to whom her parents objected.

These difficulties led to her being brought once more to court where it was recognized that the home conditions were not favorable for this unstable adolescent girl. She was placed in a very fine school where she did well for seven months. Then at her own and her parents' request she was permitted to return home on condition that the parents would not permit her to go out to work. She remained at home for about three months; then the parents reported the same charges of incorrigibility and laziness, and the girl was returned to school. She was there, off and on, for another six months. She was allowed during this time to visit a married sister; while there she met a young man; on her return to the school she ran away, owing, the school authorities felt, to the disturbed emotional condition caused by the visit and this new acquaintance. She was once more brought back, but was most difficult to control, though many efforts were made in her behalf. Feeling that she would gain little if she did not care to remain, she was sent home, but this failed so badly that a position was obtained for her and she was allowed to live in a working girls' club.

Within six weeks she was back in court, having been caught just as she was about to run away with a theatrical troupe. Feeling that she could not be controlled in her own or any other home, she was then sent to a correctional institution. For some time her record was good. Then she ran away from there, only to be returned. Following this she was kept in the institution for about a year, during which time she showed steady improvement. After

this period of training and control there were no further complaints regarding her. After the girl was released she continued to do well. She is now happily married and is considered by all who know her to be a good woman.

Here we see that there are several other factors besides adolescent instability, but the others seem much the less important ones. The heredity and home conditions were well and authoritatively known, not only through acquaintance with the parents, but because of the complete and accurate accounts of the probation officer. The mother and father were healthy; the mother ignorant, but well meaning; the father was a well educated man, speaking, we were told, six languages. He was, however, a man of violent, almost insane temper, abusive to his family, indolent to the extent of having been arrested once for their non-support. He was irascible, quarrelsome, utterly unappreciative of all that was done for him or his children.

J. had walked and talked normally; was considered a healthy child. When one year old she had malaria and when thirteen and a half years had scarlet fever and diphtheria. She was said to have a bad temper though ordinarily she was considered gentle. She was truthful, fond of company and not at all moody.

The conditions at home were often trying, of course, due to the father, but J. is the only one of the six children who has ever been in court, nor had she shown any indication of delinquency previous to adolescence. Then she resented the authority of her parents and had as many quarrels with her mother as with her father. In this, as in all her difficulties, her poor mentality may have been a factor, for she was definitely lacking in powers of judgment. Had she had more ability to analyze and reason, she might have been able to interpret the home situation better and to have been more adequately equipped to cope with it. Perhaps she would, too, have taken greater advantage of the excellent opportunity offered her in the school where she was placed. But J. was far from being generally considered as subnormal, and we have seen that later she was able to adjust herself to her social environment and that she is now efficiently meeting her social obligations as wife and mother. However, at the adolescent period her innately meagre intellectual gifts may have led her to be easily influenced by others and may have been a factor in inadequate will and poor self-control. Home conditions that were formerly tolerable became intolerable. Her great instability was shown moreover under other and very good conditions, such as the school she attended and the girls' boarding club where she was tried. In this case a long period—in all about three

years—elapsed between the time the girl first appeared in court and the time when she became stable and reliable enough to succeed socially.

Case VI.—We have here a case where the home conditions have been unusually good, where the individual has had much in the way of educational opportunities and very many social advantages. It illustrates that good environment and wholesome recreations, as well as intelligent and sympathetic guidance will not suffice in all cases to prevent even extreme delinquency during a stormy adolescence.

W. A., fifteen years of age, was found to be in splendid condition physically; he had won a medal for being the best all-round athlete in the school which he was attending. He was big and strong, almost completely adult in physical and sexual development.

This boy was as well equipped mentally as physically. He had had unusual educational opportunities as regards both school training and other advantages and had profited by them. He was an easy talker, friendly and social in attitude toward others. His earlier school record was all that could be desired; he was considered a bright boy.

Recently, however, he had grown restless and disturbed; he had failed in some of his school studies and had expressed a desire to leave school in order that he might earn his own money. He was an adopted son and when first taken to the home of his foster-parents as a very small child, he was found to be untruthful, probably largely as a matter of lack of training, for he improved quickly in this respect. Indeed, his teachers said he had a high sense of honor. Then for a period of a year he became extremely delinquent after having been trustworthy for long. During that time he not only lied in words, but he deceived his parents in numerous ways. Furthermore he stole repeatedly; first taking money from his father's purse; then during the summer vacation, while working, he stole from the safe of his employers. Money had disappeared from the pockets of coats belonging to persons in a school near his place of employment and it was suspected that he was guilty, though he never confessed having been the culprit.

Much disturbed by this orgy of stealing, his parents sent him away to a boys' school. He had been there but a short while when he wrote a letter to the bank in which some little money was being saved for him and tried to obtain this. Meantime he had been charging articles to himself as well as his parents at various stores. He began associating with young men who spent much money and who were quite dissipated. His own dissipations, however, were not

extreme, for though he boasted of drinking with women, he drank little if at all, and his sex delinquencies certainly never amounted to much. All of this occurred within a year during which time the boy was totally unlike his former self. While he had earlier been untruthful, he had not practiced deception nor had he ever stolen previously. He had always maintained good standing in his classes without making any effort and had never previously failed in any of his studies. Now the stealing was repeated not only frequently, but committed under conditions that were most condemnatory.

A year later W., then doing well, said of himself, "I don't know what was the matter with me last summer. I must have been pretty queer to do what I did." By this time he was once more doing well at school, applying himself diligently in order to complete his college preparatory course and during the year his moral lapses had been few indeed. He has never returned to his former delinquencies and has by now established for himself a thoroughly good reputation.

As stated above, W. was an adopted son, but there was nothing marked in the heredity, which was known to the foster parents. The only fact of any significance was that a maternal uncle was considered worthless. The experience and training during W's first four or five years were not good, in that there was but little control exerted. But from that time on he lived in a household where there were very high ideals and he had unusual opportunities. There had been no bad influences in the way of companionship until adolescence, and then he had not sufficient moral fibre to resist the temptations to which these companions introduced him. But that his delinquencies were due largely to the instability which was then marked in his case is evidenced by the complete recovery of his former habits of rectitude and honesty. No doubt his early general physical and sex development accentuated this instability and were factors.

THE BINET-SIMON TESTS IN RELATION TO THE FACTORS OF EXPERIENCE AND MATURITY.

By J. E. WALLACE WALLIN, PH.D.,

Psycho-educational Clinic, Board of Education, St. Louis, Mo.

In the December (1914) number of *THE PSYCHOLOGICAL CLINIC*, Messrs. Pintner and Patterson supply data, from an analysis of the Binet-Simon records on file in an institution for the feeble-minded, which indicate that the adult inmates ("above fifteen") are superior to the child inmates ("below fifteen") in the two tests studied, namely, the naming of the days of the week and months of the year. The results show that on the basis of a passing standard of 75 per cent, the days-of-the-week test is normal for the adult group at the B.-S. (Binet-Simon) age VI and for the child group one year later. On the other hand, the months-of-the-year test is normal for both groups at age VIII. That the adults' superiority compared with the children's is actually larger in the months tests than in the weeks test, instead of being smaller as would appear from the above statements, becomes apparent if we compare the average efficiency for all the B.-S. ages of the two groups in the two tests. The average per cent of passes (the general averages of all the age averages) in the months tests is for the adults 56.2 and for the children 36.3, a difference of 19.9, while the corresponding averages in the days test are 76.3 and 63.6, a difference of only 12.7. That the records, when thus compared, show that the adults did relatively better in the months test would, I believe, be in accordance with expectation, on the authors' theory that the adults' superiority in the two tests is due, not primarily to the fact that they have attained a higher stage of intelligence, but to the fact that they have had more experience with the tests in question—the experience that comes inevitably with the necessity in workaday life of attending to the days of the week and months of the year.

Several years ago a similar analysis of "maturity" difference¹ was made for various tests, based on the testing and the B.-S. classification of subnormal epileptics. A comparison was made between the records of children and adults for the following tests: time of naming the four B.-S. colors, time of reading the B.-S. selection, number of memories retained from reading said selection, time of uttering

¹ Called maturity difference simply to indicate "differences between the juvenile and adult periods of life." *Experimental Studies of Mental Defectives: a Critique of the Binet-Simon Tests and a Contribution to the Psychology of Epilepsy*, 1912, p. 69.

60 detached words, time of replacing blocks in the form board (Vineland modification), and the strength of grip. The "adults" included those twenty-one years or over, and the "children" those who were less than twenty-one. Twenty-one was chosen as the dividing line, not especially because it is the point of differentiation in common law between the period of minority and legal majority, but because the processes of physical maturation are frequently considered to be largely completed at that age, and especially, according to my observation, the mental differences due to repetition, habituation, experience, become apparent appreciably later in subnormal than in normal individuals. Hence it was believed that significant differences in the B.-S. rating, or in the results of individual tests, between the groups of epileptic adults and children as thus defined would probably represent differences dependent upon maturity and experience.

While no attempt was made to justify this construction from an elaborate analysis of the results of the individual tests which were studied, a mere inspection of the curves of mental age distribution showed that the adults graded decidedly higher than the children. There were less adult than child idiots and imbeciles, and more adult morons. The conclusion seemed to follow that "as the B.-S. scale is now constituted, it may be assumed that defective adults will grade somewhat higher than defective children." . . . "The adults among defectives possess a larger storehouse of experience and acquired knowledge."²

On the other hand, the analysis of the tabular data for the six individual tests³ which were specifically investigated revealed significant maturity differences in some tests but not in others. I shall here give the results of a more complete analysis of the first five tests mentioned above than was possible in the earlier treatment.

The adults clearly excel in the reading test. They read the selection in less than half the time (47.6 sec.) required by the children (97.4 sec.); and they vary about half as much among themselves in the time required to read it (M.V., 14.3) as do the children (M.V., 26.6). The children, however, gain almost three times as much from B.-S. age to B.-S. age between IX and XI⁴ (average improvement per year, 37.2 sec.) as do the adults (13.8 sec.).

A surface examination of the results for the form-board test (table XIII in the book) would indicate that the adults surpassed the children considerably in the speed of the performance (47.4 sec.

² *Ibid.*, p. 15 and Table I.

³ *Ibid.*, pp. 69, 72, 73, 79, 82, 88, 97, 99.

⁴ The comparisons must be limited to certain ages throughout because of lack of comparative data for some ages.

as against 65.2 sec.) and in the amount of improvement with each mental age from V to XII (14.4 sec. per B.-S. year as against 7.7 sec. for the children), although their M.V. was larger (17.1 vs. 12.9). An examination of the table, however, indicates that the average for the children is vitiated by the dominant influence of an unusually large score in age III. If this is eliminated the difference between the general averages will be reduced to 3.9 sec., and the children will excel (31.3 sec. vs. 35.2).

In all the other tests the children excel in the average scores, in the amount of improvement with increasing B.-S. age and sometimes in the M.V., but the differences in the average efficiencies are not large. Thus it takes the children on the average .8 sec. less time to name the colors than the adults, while their M.V. is only .2 less than the adults'. They utter only .9 of a word more in 3 minutes than do the adults (38.9 vs. 38.0 words), while their M.V. is .1 larger. Their average amount of improvement from mental age to age is, however, more considerable (11.8 words vs. 8.6 for the adults). The children reproduce from the reading selection .6 units more than do the adults (5.5 vs. 4.9 units), their M.V. is .3 less (1.1 vs. 1.4), while their improvement with each successive B.-S. age is .6 unit more than for the adults (1.8 vs. 1.2 units).

It is thus evident that there is a significant difference in only one test, or at least two: in the time to read the selection, in which the adults excel, and in the form-board test, in which the children excel. The greater facility of the adults in reading is explicable on the assumption that they have had more practice in reading than the children, although the institutional type of epileptic adults are not notorious for the exercise of their reading propensity. The form-board test, on the other hand, represents a novel situation. There are practically no situations in the daily life of the institutional adult epileptic (or of the average normal adult either) which call for the form-board type of response. Hence ordinary experience fails to provide any specific practice for this performance—specific practice for the specific type of skill required. It would only affect the general factor; that is, intelligent adaptation to a novel situation. It is possible, however, that children, both in and out of school, receive a certain amount of specific training for this performance through their construction games with blocks of various shapes, and through their plays with puzzle boards somewhat similar in nature. Most of the epileptic children tested were school cases. This may explain the slight superiority of the children in this test. Similarly, the fact that the children named the colors slightly more rapidly and reproduced slightly more memories from the reading selection than

the adults did may be due to the fact that they had been given practice in school in the naming of colors and in the reproduction of contents of selections read. However, our results show a significant difference in only one test, and therefore suggest that it is legitimate to use the same mental age norms for both children and adults in all the tests except the reading test.⁵ This conclusion, of course, needs to be verified for other types of subnormals than epileptics (and forsooth, also for normal children and normal adults) when arranged into similar groups: children under twenty-one years, adults twenty-one years and over.

If the dividing line between the children and the adults is drawn before the children reach maturity, the adult superiority in a given test might depend upon the factor of maturity rather than on the factor of experience. The fact that the epileptic children improved relatively more with each ascending B.-S. age than the adults in all the tests would seem to indicate that not only the mental age but also the chronological age of the children increased with each ascending B.-S. age. The data are not now available for demonstrating the correctness of this supposition with the present group of children, but it has been found to be true for a parallel set of subnormal juvenile cases. It should follow therefore that the children gain more than the adults from mental age to mental age not because their mental age increases, since there is a parallel increase for the adults, but because their chronological age or maturity increases. With the adults on the other hand, there would be no growth in maturity, even if the chronological age increased slightly with increasing B.-S. age, on the supposition that the adults had practically attained their maturity at the age of twenty-one.

The fact that the children gain more with ascending B.-S. age would suggest that there should be less difference between the children and the adults in the higher B.-S. ages, than between the children and the adults in the lower B.-S. ages. In order to test this supposition I have worked out the amount of difference between the children and the adults, first for the children's and adults' averages for the lower half of the B.-S. ages, and, secondly, for the children's and adults' averages for the upper half of the B.-S. ages which are tabulated for each test.

Actually the difference between the children and adults was larger for the lower B.-S. ages in four tests: the four colors (the difference was larger in the lower ages than in the upper by an average difference of .84 sec. per B.-S. age); the form board (larger by an

⁵ But facts have been given tending to show the validity of the reading test as a test of intelligence: as before, p. 72. Granting that this is so, separate norms for children and adults may still be required in this test.

average difference per age of 23.9 sec.); the reading selection (by an average difference per age of 45.6 sec.); and the week days (by an average difference per age of 13.0 per cent; computed from Pintner and Patterson). In the first two tests the children excel, while in the last two the adults excel. On the contrary, in the three remaining tests the differences between the children and the adults are larger in the upper B.-S. ages: 60-words (by 5.5 words per age); memory units (by 1.90 units per age); and months test (by 9.2 per cent per age; computed from Pintner and Patterson). In the first two tests the children excel while in the last the adults are superior.⁶ The results are thus only partially in harmony with the supposition. What is the explanation? The suggestion is, first, that the difference between the children and the adults is larger in some tests in the lower B.-S. ages because in those tests there was a larger per cent of children tested relatively to the per cent of adults in the lower ages. Secondly, there should be conversely a smaller percentage of children relatively to the number of adults in the upper B.-S. ages for those tests in which the difference is larger in the upper ages.

The first supposition holds so far as the form-board and week-days tests are concerned. The percentage of children is 10 per cent larger than the percentage of adults in the lower ages for the form-board test; while for the week-days test it is 11 per cent larger. It is noteworthy, however, that while the children excel in the form-board, the adults excel in the week-days test. In the reading test the percentages are the same, while in the color-naming test, in which the children excel, the per cent of adults in the lower ages exceeds the children by 5 per cent. The second supposition is confirmed for all tests. However, there are only 2 per cent more children than adults in each test, and while the children excel in two of these tests (60 words and memory units), the adults excel in the third (months).

Our analysis thus leaves the discrepancy unexplained, and points to the necessity of a further study of the effect of the factors of maturity and experience on large numbers of different types of subnormal persons (as well as normal individuals), in order that we may know more surely whether it is necessary or desirable or possible to exclude from intelligence scales those tests which are influenced by experience, merely because they are so influenced and irrespective of whether or not the tests in themselves are intrinsically valuable or give us an insight into traits which are significant for mental or social growth and development.

From the earlier analysis of the B.-S. results it was conjectured

⁶ It should be said that in all tests when the children are superior to the adults in the lower B.-S. ages they are also superior in the upper ages. The same statement applies when the adults are superior to the children.

that it is not "essential to eliminate (from scales of development) all the tests which are dependent upon *training* . . . partly because this is not desirable and partly because this is impossible. Nature and nurture proceed hand in hand, inseparable, reciprocal, interacting and independent only in conception. Just as we posit a normal rate of development which the forces of human nature undergo—normal, that is, within limits—so we may posit a normal curve of development within variable limits for a given order of civilization or social evolution, which human changes follow as a result of the processes of nurture. We cannot, if we would, test merely pure native capacity uninfluenced by environmental agencies, except possibly during the first months of life. But we can measure native capacity as modified by the environment" (p. 57).

The analysis of a number of individual tests in this paper seems, therefore, to show that common age standards can be used, without very much error, for both subnormal children and subnormal adults, in all the tests except in reading and naming the week days (and possibly naming the months of the year), where the mental age scores are lower for the children than for the adults. However, whether the line between the juvenile and adult periods of life should be drawn at fifteen, twenty-one, or some other age, will depend on whether maturity is attained at fifteen, twenty-one, or some other age; and this can be ascertained only by experimentally determining for separate mental traits the age beyond which they fail to show any increase in strength or functional capacity.

CLINICAL PSYCHOLOGY AND THE RURAL SCHOOLS.

BY ERNEST R. GROVES,

Professor of Psychology, New Hampshire State College, Durham.

In THE PSYCHOLOGICAL CLINIC for February, 1913, Professor Pyle makes an appeal for an organized effort to discover the feeble-minded living in the country. Although it is impossible at present to determine the proportion of rural aments as compared with those in the cities, it is certain that we have a large number of physically and mentally defective children in rural and village communities who are receiving less attention than those of the same classes who happen to live in the cities. A recent careful study of the feeble-minded in New Hampshire¹ is very interesting with respect to its conclusion regarding the feeble-minded in the country. The investigation made to discover the number of feeble-minded in the state also found their geographical distribution by counties. "One of the most significant studies that can be made in the survey of these counties is the geographic distribution of the feeble-minded and the proportion of the entire state population that falls within this defective class. Since there has been a report from every town in the state, either by questionnaire or personal canvass, this proportion may be considered fairly correct even though many cases have not been reported. One of the most significant revelations of this table is the range of feeble-mindedness gradually ascending from the smallest percentage, in the most populous county of the state, to the largest percentages, in the two most remote and thinly populated counties."

A student of country-life problems can hardly fail to appreciate the importance of this proportion of feeble-minded in the rural counties. Without attempting to assume that such a condition is true of all the states, it is a fair inference that the rural feeble-minded children are relatively given less attention than the seriousness of the situation justifies. This statement does not mean that teachers and superintendents in the country are indifferent to or ignorant of the significance of the problem of amentia, but rather that there is at present lacking the efficient, organized, administrative effort to solve through the schools the problem of the defective country child.

It is most reasonable to turn to the schools as the means by which the country's need may be met. As in most fundamental social efforts the instrument for progress is already at hand. The country school

¹ Report of the Children's Commission, Concord, 1914, p. 94.

organization must be made use of in the attempt to find the children who are physically and mentally defective. It is wise economy to organize the forces of public education so as to enable them to undertake clinic investigation in localities too small to carry on such work by themselves. Moreover, there is a special reason why such investigation for the finding of the defective child in the country schools will appeal to educational officials. They of all persons are likely in practical and even painful ways to feel the need of such work being done. Any school administrator of experience realizes the magnitude of this problem as it appears in matters of school administration, especially as it is related to moral difficulties.

In any such investigation an interested but unbiased source of information provides a useful first step in the effort. The teacher is a most excellent source for such preliminary information. She is hampered in her daily work by the defective child, and to a considerable extent may be trusted to bring such children as need immediate attention to the notice of the proper official for examination. Her school records have great value for the expert, and can easily be made to have still greater value. The rural teacher in some cases may even use as a preliminary test the Binet scale, or the superintendent may give a preliminary test. Although such an investigation can not take the place of expert examination, it can serve a purpose in giving information of value to the school administration and perhaps in showing the need of expert help.

The rural ament will never receive deserved attention unless educators are alive to the greatness of his needs. At this point those who realize the significance of the defective child must concentrate educational effort. The demand for the state-wide clinic work along both physical and mental lines must come from the teachers and school officials before the legislators can be expected to consider the matter seriously. The educating of schoolmen and schoolwomen in regard to the imperative character of this special problem is no hopeless undertaking. Already a limited attention to such educating effort has accomplished wonders.

It will be impossible merely to expend social energy in finding by clinic tests in small communities the defective children. A larger public provision for the treatment and segregation of such children must also be provided, and any attention to the problem will make this fact very clear. The dull child who improves when given special class work must have the attention in the rural communities that he now receives in the cities. It would seem as if special class work for country children involves necessary expenses and problems of administration greater than the demands of similar

work carried on in the cities. Who can question, however, the social economy such work represents?

The large problem of institutional care for mental defectives created by the discovery of additional aments is not so hopeless as it at first seems to one who knows that even now proper segregation is not provided for all who need it. Science of course can hardly fail to discover many new cases of children needing attention when it investigates rural districts. However, the significance of public opinion, alive to such needs as a result of educational effort, must not be forgotten. Indeed the public indifference is largely due to the fact that the magnitude of the problem of feeble-mindedness is just being recognized by science. It must also be remembered that as soon as a serious attack is made upon the problem all along the line there will be a rapid decrease in the offspring born to feeble-minded parents. As segregation is increased the problem must decrease. Our present situation is due to neglect resulting from not having understood the real meaning of this social problem. There is also a possibility that our progress in taking care of the morons will not depend wholly upon our ability to provide segregation. Science offers hope of other means of relief.

A very aggressive attack upon the problem of amentia in the country is certain to provide unexpected social relief along other lines. It is impossible to know how much the problem of the use of alcoholic drinks in the country is related to the problem of feeble-mindedness. When one has seen how strong the craving for intoxicants is among some country people without the suggestions and constant temptations provided by the saloon industry in the cities, it is clear that much may be expected of any successful attack upon rural amentia in decreasing alcoholism. The problem of illegitimacy in the country is certainly in large measure a problem related to feeble-mindedness. The moral imbecile and the feeble-minded boy given to occasional fire-setting for a time are a most serious menace. When this problem of rural amentia is more successfully met, a great economic gain also must result. The best propaganda carried on by experiment stations and agricultural colleges must fail in communities where a feeble-minded strain by close intermarriage has made nearly an entire community defective or abnormal or has been a large cause of the constant loss of the ambitious youth because of their eagerness to remove from such an unfavorable social environment to a city having promise of better conditions. Progress in the control of rural amentia must surely conserve the resources of the various activities that are attempting to improve social conditions in the country. Political exploitation also in its different forms in rural communities is tied up

with amentia. The largest result, perhaps, of all which may be expected to follow an effective program respecting the country feeble-minded is the bringing of optimism into the lives of people in some country places who at present are possessed by a pessimism which forms the largest obstacle to social and economic progress.

REVIEWS AND CRITICISM.

The English Convict: A Statistical Study. By Charles Goring, M.D., B.Sc. London: Darling and Son, Ltd., 1913.

This extensive collection and tabulation of statistics, which resulted in a volume of approximately nine hundred pages of ordinary octavo size, was begun under the supervision of Dr. Griffiths in 1901. The material, after having passed through several hands, finally came to the notice of Dr. Goring about 1904. He assumed the responsibility of this most laborious task through almost a decade and has finally given to us a monumental piece of work in criminal science.

The thesis maintained in this volume is that there is no physical or mental "criminal type." The word "criminal" throughout the book is used in the sense of the legal interpretation of that word. The criminal is not abnormal, ("qualitatively different") as has been formerly held, but rather is unusual ("a deviation from the normal").

Taking up the larger subdivisions to which the book readily lends itself, the introduction is concerned with a review of previous methods in criminal science with special emphasis upon that of the Lombrosian school, together with the author's angle of attack. Part I consists of the compilation and treatment of an enormous amount of statistics. The author concludes this section with these words: ". . . there is no such thing as a physical criminal type" (page 173). Part II gives us the following subdivisions: "The physique of criminals," "Age as an etiological factor in crime," "The criminal's vital statistics," "The mental differentiation of criminals," "The influence of 'the force of circumstances' on the genesis of crime," and lastly, "The influence of heredity on the genesis of crime."

The first subdivision in Part II repeats portions of Part I, in that both are concerned with the criminal's physique. The conclusion reached is that the criminal is under weight and under size. Upon this conclusion, the author claims, all the criminal type theories since the time of Lombroso have rested. As to the relation of age and crime, in the second division of Part II; the author fails to draw any positive conclusions. However, the tables point to an increased mental propensity toward crime at certain ages, and consequently there seems to be a possible and rather definite age-distribution. Under the heading, "Vital statistics," we have an elaborate tabulation and discussion of the health, diseases, mortality, and enumeration of criminals. The general conclusion set forth is that imprisonment has no apparent effect upon the physique or mentality of those thus incarcerated. Also, that there is a diminution of contagious diseases among criminals; while the mortality from suicide and "major" surgical opera-

tions tends to be larger. And finally, the death-rate from tuberculosis is between one-fourth and one-fifth which compares favorably with the general population.

Is there a mental criminal type? The answer to this question is the subject matter of the fourth section of Part II. The author engages in the observation and study of certain mental characteristics such as "temperament," "temper," "facility," "conduct," "suicidal tendency," etc. From this interesting study, the conclusion is reached: ". . . that the one vital mental constitutional factor in the etiology of crime is defective intelligence" (page 263). This section is suggestive toward this end,—that there is an ever-increasing demand for accurate psychological research in this special field. The next section is concerned with the relation of environment to crime. The common belief that unfavorable environment is conducive to crime is not well founded because of the fact that there are more fundamental factors influencing the situation. The point in question is only an apparent and not a real cause of crime. The author finds doubtfully significant the "relationship between social inequalities" (adverse environment and force of circumstances) and crime.

In the study on the fertility of criminals, the author makes a very careful investigation, extending through several years, concerning the rate of birth, death, marriage, illegitimacy, and divorce, together with many other minor facts concerning the points in question among criminals and the general population. The conclusion is that the criminal is a descendent of the most prolific stock. Furthermore, his apparent sterility is not to be attributed to physiological conditions, but rather to a psychological misunderstanding. The final section in Part II consists of a study of heredity and crime. The exact statistical method employed here is the "fourfold table" of Dr. Karl Pearson. Without further details, I quote the results: ". . . the criminal diathesis . . . is inherited at much the same rate as are other physical and mental qualities and pathological conditions in man" (page 368). A secondary conclusion is that "parental contagion" is of trifling importance in comparison with the influence wielded by heredity and mental deficiency.

The positive results of such an enormous task as this book represents may be put briefly: the criminal is lighter in weight and lower in stature and the major part of the etiology of his misfortune can be attributed to two factors,—mental deficiency and heredity, the greater of which is heredity. The constitutional conditions conducive to the committing of crime, arranged in order of decreasing importance are: mental deficiency, alcoholism, sexual profligacy, epilepsy, and defective physique. No individual is predestined to be a criminal because of the wiles of heredity, or paucity of intelligence, but rather because of these misfortunes the individual is more likely to be selected for a criminal career. Because of a lack of intelligence, he is less able to resist temptation, less able to conceal guilt; because of a stunted physique, less able to escape arrest.

On the whole, the book is well arranged for reference or careful reading; the data admirably handled; the ideas suggestive and helpful. The volume is to be recommended for systematic study to all who are interested in any phase of criminal science.

M. L. BEANBLOSSOM,
Psychologist, Indiana Reformatory.

INDEX OF NAMES.

Names of contributors are printed in **SMALL CAPITALS**, and the page numbers of the contributions in full face type. In the case of authors reviewed the page numbers are in *italics*, and in case of mention they are in Roman type.

Addams, Jane, 52.
Ament, James E., 248.
ARNOLD, FELIX, 234.
Ayres, L. P., 27, 43, 197.
Baker, Frank E., 248.
BARNES, HORACE RICHARDS, 107.
Bart, Martin W., 44.
Beach, F., 135, 173.
BEMBLOSSON, M. L., 278.
Becht, George E., 247.
Bessola, 173.
Binet, A., 197.
Bleichröder, 178.
Bleumed, C. S., 200.
Bourneville, 1, 173.
BOYER, PHILIP A., 82.
Brigham, 188.
BRONNER, AUGUSTA F., 249.
Brown, Elmer Ellsworth, 247.
Brumbaugh, M. G., 59.
Bryant, Louise Stevens, 55.
Buckel, C. Annette, 54.
Bunge, 170.
Butler, Nicholas Murray, 248.
Cameron, Norman, 107.
CATLIN, CLAIBORNE, 12.
Cattell, James McKeen, 26, 210.
Childs, 187.
Clay, Mrs. A. M., 143.
Claxton, Philander F., 247.
Clouston, T. S., 249, 250.
Coffman, Lotus D., 210.
Collicott, J. C., 153.
Conney, Marie, 153.
Cornman, O. P., 59, 84.
Courtis, S. A., 90.
Crain, Kathryn, 56.
Cubberly, E. P., 54.
CUMMINS, ROBERT A., 153.
Currier, Enoch H., 214.
Dahl, 173.
Dean, H. R., 135.
Decroly, M., 43.
Dejerine, 174.
Demme, 170.
Denison, Elsa, 89.
Dewey, George, 152.
Dewey, John, 53, 70.
Dickens, Charles, 169.
Down, Langdon, 135.
Duncan, Matthews, 176.
Echeverria, 173.
Ebbinghaus, H., 143.
Emerick, E. J., 193.
FARRELL, ELIZABETH E., 29, 57, 86.
Fernald, Walter E., 1, 44, 101.
Fernberger, S. W., 56.
Fetterman, J. M., 54.
FOSTER, WILFRED L., 230.
Freud, Sigmund, 209.
Froebel, F. W. A., 1.
Geiger, William F., 153.
Gerney, Oscar E., 56.
Gesell, Arnold L., 52.
Gesell, Beatrice Chandler, 52.
Glenn, Helen, 55.
Goddard, Henry H., 29, 155, 185, 197.
Gordon, Alfred, 174.
Goring, Charles, 275.
Gorgas, W. C., 151.
Grasset, 201.
Graves, Frank P., 248.
Green, James M., 248.
Griffiths (Dr.), 275.
GROVES, ERNEST, R., 272.
Gunn, Selskar M., 182.
Gutzman, H., 209.
Hall, G. Stanley, 249.
Hanus, Paul H., 29, 90.
Harbold, P. M., 248.
Harris, Seale, 151.
Healy, William, 251.
Herbart, 3.
Hercord, 174.
Heron, David, 122.
Hertzog, Walter E., 248.
Hickman, J. E., 173.
Hillegas, M. B., 90.
HINCKLEY, ALICE C., 213.
Holmes, Arthur, 70, 107.
Howe, 173.
Ingerslevs, 176.
Johnston, Charles Hughes, 210.
Johnston, Collins H., 171.
Jones, C. W., 153.
Jullien, 133.
Kaye, 133, 178.
Kemp, E. L., 248.
Kendall, Calvin N., 248.
Kende, Maurice, 174.
Kerlin, 135, 173.
Kind, 173.
Koplik, Henry, 133.
Laitinen, 137, 170.
Lancereaux, 137.
Lapage, C., 173.
Lehman, Ezra, 248.
Le Pileur, 133.
Lonnset, 137.
Loe, Charles, 248.
Lovejoy, Owen R., 60.
Ludlum, S. D., 55.
McGee, Grace, 139.
McMurrys (the), 70.
MacNicholl, Alexander, 173.
Maennel, B., 45.
Mann, Horace, 106.
Marro, Antonio, 249.
Marvin, Mary E., 56.
Maxfield, F. N., 55, 108.
Metchnikoff, E., 137.
Mill, J. S., 180.
Miller, Berna, 153.
Miller, Cyrus C., 29.
MITCHELL, DAVID, 55, 91, 149, 180, 208.
Mitchell, John Purroy, 29.
Mogridge, George, 101.
Molli, 174.
Montessori, Maria, 1, 6.
Moore, Anne, 103.
Morgan, Barbara Spofford, 91.
MORRISON, CAROLYN E., 138.
Morrow, Prince, 133.
Mott, F. W., 135.
Murdoch, J. M., 173.
Nicioux, 136.

NOBLE, ISABEL, 78.
 Noyes, Anna G., 55.
 Olson, William, 153.
 Oris, MARGARET, 93, 182, 201.
 Paine, Olive, 139.
 Paris, R. J., 137.
 PATERSON, DONALD G., 197, 266.
 Pearson, Karl, 276.
 Peller, Sigismund, 176.
 Pestalozzi, 52, 106, 180.
 Phillips, George M., 248.
 PHILLIPS, BYRON A., 180.
 PINTNER, RUDOLF, 197, 266.
 Playter, Charlotte S., 54.
 Prendergast, William A., 29.
 Puffer, J. Adams, 180.
 PYLE, W. H., 143, 272.
 Reed, S. L. 55.
 Renauet, 136.
 Richardson, 137.
 Riley, J. W., 160.
 Ross, Edward A., 25.
 Rothermel, A. C., 248.
 Rousseau, J. J., 106.
 Sandler, 176.
 SATRE, HARRIET, 6.
 Schaeffer, Nathan C., 247.
 Schaefer, 176.
 Schmidt, Henri, 137.
 Sears, J. B., 75.
 Seashore, C. E., 43.
 Seguin, E., 1.
 Shann, George, 59.
 Shuttleworth, G. E., 135, 173.
 Simonds, 137.
 Slugg, Emily, 56.
 Smart, Isabelle Thompson, 37.
 Smedley, 145.
 Snedden, David, 210, 248.
 Snellen, Herman, 147.
 Spencer, Betty B., 56.
 Spratling, 174.
 Stockard, 136.
 Stowe, A. Monroe, 211.
 Straughn, William R., 248.
 Strong, 187.
 Sullivan, W. C., 137.
 TAYLOR, CHARLES KEEN, 114.
 Terman, Lewis M., 54, 149, 187.
 Thomson, Belle, 56.
 THORNDIKE, E. L., 169, 186, 247.
 Tredgold, A. F., 135, 173.
 TRAFTTEN, A. W., 48.
 Twitmeyer, E. B., 55.
 Twitmeyer, George W., 26.
 Updegraff, H., 27.
 Van Sickle, J. H., 210.
 Went, Helen, 153.
 VOLKMOR, HILDA, 78.
 Wagner, Richard, 180.
 Wagner, W. L., 143.
 WALLIN, J. E. WALLACE, 43, 54, 92, 121, 170,
 236.
 Wanamaker, John, 68, 70.
 Weeks, D. F., 101.
 Weichselbaum, 187.
 Weinberg, 134.
 Wernicke, 177.
 Whipple, G. M., 143, 208.
 Wilbur, C. L., 171.
 Wilson, Woodrow, 152.
 Winship, Albert, 248.
 WIRMER, LIGHTNER, 1, 28, 44, 55, 70, 107.
 Woods, Matthew, 174.
 Woodworth, R. S., 184.

INDEX OF SUBJECTS.

Acceleration, 191.
Adolescent Instability, Effect of, on Conduct, 249.
Adolescents, 93, 107, 143, 201.
Alcoholism, 136, 170, 260.
Ambidexterity, 7.
Amenia, *see* Feeble-minded.
Am. Assoc. for the Advancement of Science, 184.
Am. Psychological Assn., 184.
Am. Public Health Assn., 182.
Articulation, 138, 209, 219.
Artistic Value of the Montessori Geometrical Insets, 6.
Audiometer, Pilling-McCallie, 147.
Auxiliary school, 100.

Babies, 53.
Backward Child, The (review), 9.
Binet Mental Ages, The Significance of the, 185.
Binet-Simon Scale, 30, 43, 154.
 Tests, Experience and the, 197.
 in Relation to the Factors of Experience and Maturity, 266.
Binet Tests, 124.
 Applied to Colored Children, 190.
Boys, The Further History of Some Troublesome, 107.
Breathing and Memory, Obstructed, 234.

Case records, 12, 35, 48, 93, 107, 123, 163, 201, 213, 252.
Changing America (review), 25.
Child Labor Committee, National, 60.
Children, Colored, 190.
 Speech Defects in Young, 138.
Children's Bureau, Psychology and Medicine Basis of National, 118.
Class Size and School Progress, 82.
Clinic, Educational, 153.
 Psycho-educational, 92.
 Psychological, 107.
 In New Brunswick, N. J., 182.
Conduct, Effect of Adolescent Instability on, 249.
Convict, The English, 275.
Criminals, 275.

Dancing, 115.
Deafness, 213.
Defective Pupils in the Public Schools of Tacoma, Wash., 153.
 See also Ungraded Classes.
Degeneracy, 122, 275.
Delinquency, 249.
Delinquent Girls, A Study of, 143.
Dental Hygiene in the High School, Improvement of, 230.
Drawing, 6.
Education, Extension Work in, by U. of Pa., 247.
Educational Administration and Supervision, 210.
Eugenic Generation, The Hygiene of, 121, 170.
Exceptional Child in School, The, 48.
Experience and Maturity, The Binet-Simon Tests in Relation to the Factors of, 266.
Experimental Psychologists, Meeting of, 26.

Feeble-minded, 54, 198, 272.
 Mass. School for, 69, 101.
 Statistics of, 45.
Further History of Some Troublesome Boys, 107.
George Peabody College, 119.
Girl's Point of View, The Problem of Life from a, 93.
Girls, A Study of Delinquent, 143.

Heredity, 122, 260, 276.
High School, Improvement of Dental Hygiene in the, 35.
 Statistics, 35.
How I Kept My Baby Well (review), 53.
Hygiene, Dental, 230.
 of Eugenic Generation, 121, 170.
 the School Child (review), 148.

Incorrigibility, 112, 253.
 due to Mismanagement and Misunderstanding, 12.
International Congresses, 92.

Junior Colleges, 211.

Kindergarten, 2.

Manual Training, 69, 99.
Massachusetts School for Feeble-minded, 69, 101.
Masturbation, 12.
Maturity, The Binet-Simon Tests in Relation to the Factors of Experience and, 266.
Medicine, Psychology and, Basis of National Children's Bureau, 118.
Memory, Obstructed Breathing and, 234.
Mendelism, 122.
Montessori Geometrical Insets, Artistic Value of the, 6.
 Method, 1, 6.
Morality, 114, 178.
 A Study in the Borderland of, 201.
Moving Pictures, 116.

National Children's Bureau, 118.
 Mouth Hygiene Assn., 182.
Normal Child and Primary Education, The, (review), 52.

Philadelphia public schools, 82.
 evening schools, 151.
Primary Education, The Normal Child and (review), 52.
Problem of Life from a Girl's Point of View, The, 93.
Promotion percentages, 82.
 See also Retardation.
Psycho-educational Clinic, 92.
Psychological Periodicals, Directory of (revised) 120.
Psychology and Medicine Basis of National Children's Bureau, 118.
 Clinical, at Univ. of Pittsburgh Summer School, 64.
 and the Rural Schools, 272.
Educational, 3.
 of It, The, 114.
 Systematic and Applied, at Univ. of Pa., Summer Courses in, 55.
Public Education Assn., 61.

Retardation, 82, 191.
 as Indicated by One Hundred City School Reports, 75.
Rural Schools, Clinical Psychology and the, 272.
Rutgers College, 182.

St. Louis Public School Establish a Psycho-educational Clinic, 92.
School and Society, 210.
 Inquiry Report on Ungraded Classes, A Study of the, 29, 57, 99.
Sense Training, 1, 6.
Six Weeks with a Supposedly Hopeless Case, 213.

Southern Medical Journal, 151.
Speech, Stammering and Cognate Defects of, (review), 209.
Defects in Young Children, 138.
Special school centers, 71.
Stammering and Cognate Defects of Speech (review), 209.
Stanford University, 75.
A New Research Fellowship at, 54.
Syphilis, 132.
Teachers' College for the South, A, 119.
Tests, 30, 43, 124, 145, 154, 166, 182, 234.
A Manual of Physical and Mental, 208.
See also Binet-Simon Scale.

Ticket Punch Observation, 160.
Toledo University, 211.
Training School, Vineland, N. J., 69.
Ungraded Classes, A Study of the S Inquiry Report on, 29, 57, 99.
University of Pa., 55, 184, 247.
Psychological Clinic, 16
Pittsburgh, 54.
Puget Sound, 153.
Vocational Evening Classes, 151.
Guidance (review), 180.
Wisconsin Idea, 26.

Ed
VOL VIII. NO. 1

THE

MARCH 15, 1914

Psychological Clinic

*For the normal development
of every child*

PSYCHOLOGY

HYGIENE

EDUCATION

Editor: LIGHTNER WITMER, Ph. D., University of Pennsylvania



CONTENTS

THE MONTESSORI METHOD, <i>Lightner Witmer, Ph.D.</i> , University of Pennsylvania.....	1
THE ARTISTIC VALUE OF THE MONTESSORI GEO- METRICAL INSETS, <i>Harriet Sayre</i> , Philadelphia, Pa...	6
INCORRIGIBILITY DUE TO MISMANAGEMENT AND MISUNDERSTANDING, <i>Claiborne Callin</i> , Baltimore, Md.....	12
REVIEWS AND CRITICISM: <i>Changing America</i> , Edward A. Ross.....	25
NEWS AND COMMENT: <i>Meeting of Experimental Psychol- ogists</i> ; <i>Dr. George W. Twitmeyer Died February 21, 1914</i>	28

THE PSYCHOLOGICAL CLINIC PRESS

WOODLAND AVE. AND 36TH ST.

PHILADELPHIA, PA.

THE PSYCHOLOGICAL CLINIC

A Journal of Orthogenics

*For the normal development
of every child*

PSYCHOLOGY

HYGIENE

EDUCATION

Subscription price, \$1.50 per annum (nine numbers). Single numbers, 20 cents. Foreign subscription price, \$1.75.

Published monthly except July, August, and September, by Lightner Witmer, College Hall, Woodland Avenue and Thirty-sixth Street, Philadelphia, Pa.

Entered as second-class matter February 12, 1908, at the post office at Philadelphia, Pa., under the Act of Congress of March 3, 1879.

We are sure that anyone who sees THE PSYCHOLOGICAL CLINIC will subscribe, and if he once subscribes, he will renew his subscription year after year, as the vast majority of our readers are doing. Will you give your friends this opportunity?

To save us the trouble and expense of sending out bills for renewals, we make an offer which at the same time will be advantageous to our subscribers. The regular subscription price of THE PSYCHOLOGICAL CLINIC is \$1.50. We will accept a two years' subscription for \$2.50 (absolutely net) paid in advance; and a three years' subscription for \$3.50 (absolutely net). This will enable subscribers to the current volume to obtain THE PSYCHOLOGICAL CLINIC from the beginning and including the present volume for \$9.50, a saving of two dollars and a half.

Send subscriptions and all communications to

THE PSYCHOLOGICAL CLINIC PRESS

Woodland Ave. and 36th Street, Philadelphia, Pa.

A New Book for Child Welfare Workers—

THE SPECIAL CLASS FOR BACKWARD CHILDREN

An Educational Experiment conducted for the Instruction of Teachers and Other Students of Child Welfare by the Psychological Laboratory and Clinic of the University of Pennsylvania during the Summer School of 1911

REPORTED BY LIGHTNER WITMER, PH.D.

CHAPTER

AUTHOR

I. MOTIVES AND AIMS.....	<i>Lightner Witmer</i>
II. THE PURPOSE AND ORGANIZATION OF THE SPECIAL CLASS.....	<i>Arthur Holmes</i>
III. THE CHILDREN OF THE SPECIAL CLASS.....	<i>Arthur Holmes</i>
IV. THE EDUCATIONAL ORGANIZATION.....	<i>Elizabeth E. Farrell</i>
V. THE WORK OF THE SPECIAL CLASS.....	<i>Elizabeth E. Farrell</i>
VI. ROUND TABLE DISCUSSIONS WITH STUDENT OBSERVERS.....	<i>Elizabeth E. Farrell</i>
VII. NUTRITION AND GROWTH.....	<i>Louise Stevens Bryant</i>
VIII. REPORT FROM THE SOCIAL SERVICE DEPARTMENT.....	<i>Louise Stevens Bryant</i>
IX. CLINICAL PSYCHOLOGY AND THE PROFESSIONAL TRAINING OF TEACHERS (and others interested in Child Welfare).....	<i>Lightner Witmer</i>

Cloth: 275 Pages, 43 Illustrations

Price Postpaid, \$1.50

THE PSYCHOLOGICAL CLINIC PRESS

36th and Woodland Avenue

Philadelphia, Pa.

The

John C. Winston Co.

*Commercial Printing
of the highest stand-
ard only.*

*Educational, Literary
and Scientific pub-
lications our spe-
cialty.*

*The Mechanical equip-
ment is of the latest.*

Printers
Publishers
Bookbinders

Best Material and Workmanship

1006-1016 Arch St., Philadelphia

(When writing to advertisers please mention THE PSYCHOLOGICAL CLINIC)

Directory of American Psychological Periodicals.

American Journal of Psychology—Worcester, Mass.: Florence Chandler.
Subscription \$5. 600 pages annually. Edited by G. Stanley Hall.
Quarterly. General and experimental psychology. Founded 1887.

Pedagogical Seminary—Worcester, Mass.: Florence Chandler.
Subscription \$5. 575 pages annually. Edited by G. Stanley Hall.
Quarterly. Pedagogy and educational psychology. Founded 1891.

Psychological Review—Princeton, N. J.: Psychological Review Company.
Subscription (with Psychological Bulletin) \$5. 480 pages annually.
Bi-monthly. General. Founded 1894. Edited by John B. Watson.

Psychological Bulletin—Princeton, N. J.: Psychological Review Company.
Subscription \$2.75. 480 pages annually. Psychological literature.
Monthly. Founded 1904. Edited by Shepherd Ivory Franz.

Psychological Monographs—Princeton, N. J.: Psychological Review Co.
Subscription \$4. 500 pp. per vol. Founded 1895. Ed. by James R. Angell.
Published without fixed dates, each issue one or more researches.

Psychological Index—Princeton, N. J.: Psychological Review Company.
Subscription \$1. 200 pp. Founded 1895. Edited by Howard C. Warren.
An annual bibliography of psychological literature.

Journal of Philosophy, Psychology and Scientific Methods—New York:
Science Press. Bi-weekly. 728 pages per volume. Founded 1904.
Subscription \$3. Edited by F. J. E. Woodbridge and Wendell T. Bush.

Archives of Psychology—Substation 84, N. Y.: Archives of Psychology.
Subscription \$5. 600 pp. ann. Founded 1906. Ed. by R. S. Woodworth.
Published without fixed dates, each number a single experimental study.

Journal of Abnormal Psychology—Boston: Richard G. Badger.
Subscription \$4. 480 pages annually. Edited by Morton Prince.
Bi-monthly. Founded 1906. Entire field of abnormal psychology.

Psychological Clinic—Philadelphia: Psychological Clinic Press.
Subscription \$1.50. 280 pages annually. Edited by Lightner Witmer.
Monthly (9 numbers). Orthogenics, psychology, hygiene. Founded 1907.

Training School Bulletin—Vineland, N. J.: The Training School.
Subscription \$1. 160 pp. ann. Ed. by E. R. Johnstone. Founded 1904.
Monthly (10 numbers). Psychology and training of defectives.

Journal of Religious Psychology—Worcester, Mass.: Louis N. Wilson.
Subscription \$3. 480 pages annually. Founded 1904.
Quarterly. Edited by G. Stanley Hall.

Journal of Race Development—Worcester, Mass.: Louis N. Wilson.
Subscription \$2. 460 pages annually. Founded 1910.
Quarterly. Edited by George H. Blakeslee and G. Stanley Hall.

Journal of Educational Psychology—Baltimore: Warwick & York.
Subscription \$2.50. 600 pages annually. Founded 1910.
Monthly (10 numbers). Managing Editor, J. Carleton Bell.
(Educational Psychology Monographs. Edited by Guy M. Whipple.
Published separately at varying prices. Same publishers.)

Journal of Animal Behavior—Cambridge, Mass.: Emerson Hall.
Subscription \$3, foreign \$3.50. 450 pp. annually. Founded 1911.
Bi-monthly. Robert M. Yerkes, Managing Editor.

The Behavior Monographs—Cambridge, Mass.: Emerson Hall.
Subscription \$3. 450 pages per volume. Edited by John B. Watson.
Published without fixed dates, each number a single research.

Psychoanalytic Review—New York: 64 West 56th Street.
Subscription \$5. 500 pages annually. Psychoanalysis.
Quarterly. Founded 1913. Edited by W. A. White and S. E. Jelliffe.

Psychological

Dr. Max. Rank
Edited by G. Simchi
Psychology. Russell

J. von Ossietzky
Edited by G. Simchi
Psychology. Russell

Josephine Kain
400 pages and
Edited by John B. Watson

Psychological Review
C. L. Hull
Edited by Frank

Psychological Review
Ed. by John
B. Watson

Psychological Review
Ed. by Howard

Psychological Review
W. B. K. Watson

of Psychology
R. S. Woodworth
Experimental

dear
a Prize
Psychology

W. B. K. Watson
Edited by

W. B. K. Watson
Edited by

W. B. K. Watson
Edited by

1920

To avoid fine this book should be returned on
or below

370.5
P974
v. 8

NY, SCHOOL OF EDUCATION, STANFORD
230975

Digitized by Google

THIS BOOK

